DEV intersection

ASP.NET intersection
Visual Studio intersection
SQL intersection
Azure intersection
AI intersection

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ASP.NET • Visual Studio • Azure • C# • Xamarin
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150+ Sessions
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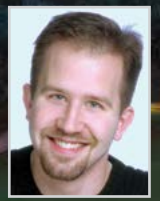
MARCH 25–28, 2018

Walt Disney World Swan and Dolphin Resort | Orlando, FL

SCOTT GUTHRIE
Executive Vice President, Cloud and Enterprise Group
Microsoft

KIMBERLY L. TRIPP
President / Founder
SQLskills



SCOTT HANSELMAN
Principal Community Architect, Web Platform and Tools **Microsoft**

TIM HUCKABY
Founder/Chariman
InterKnowlogy

BOB WARD
Principal Architect, Microsoft Database Systems Group
Microsoft

KATHLEEN DOLLARD
Principal Program Manager
Microsoft

SCOTT HUNTER
Principal Program Manager
Microsoft

JOHN PAPA
Principal Developer Advocate **Microsoft**

DEVintersection.com anglebrackets.org 203-264-8220, M–F, 9-4 EST

The EVENT that Empowers YOU!

Embrace New Technologies
Navigate New Releases
Create Innovative Solutions

Take the journey with your favorite Microsoft leaders as they dive into Microsoft's road map and the intersection of technology. Over 100+ in-depth sessions will be presented by Microsoft engineers and industry experts. They will be diving into Azure, Visual Studio, ASP.NET, SQL Server, AI, Big Data, Security, Mobile, Machine Learning, ASP.NET Core, Angular, and so much more.

Seize the opportunity as Microsoft Executive Vice President, Scott Guthrie, inspires you with his excitement about the power of technology and where the future will take us. You'll be learning from the teams who build the tools you use, and your favorite industry experts who work out in the field, create solutions, train, consult and author the books you've come to trust. They will help sort out a plethora of new technology so you know what works today and what to plan for tomorrow. They will share tips, techniques and solutions on the software your company uses now. There will be many opportunities to cross over product tracks and understand the importance of the intersection of tools, teams and technologies.

This exciting conference delivers not only expert speakers and great content, but those attendees signing up early for workshop packages get to choose cool hardware to take back to their offices!

After Dark receptions, panels and Q&A will keep you busy at night. You can meet up with other speakers and attendees in the evenings, or you can take the boat or walk right from the hotel to the ESPN club, Disney's Epcot or Hollywood Studios. Take advantage of our discounted host hotel rate at the Walt Disney World Swan before it sells out as it did last spring.

EARLY BIRD

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See website for details.

Acer Mixed Reality Headset

Xbox One S

Xbox One X

Harman Kardon Invoke with Cortana by Microsoft

This is the event to which you can bring the whole team; as an attendee, you can go to all of the co-located shows' sessions!

Developers • Systems Analysts • Architects • DBAs • CIOs • IT Managers Software Engineers • Network Administrators • Digital Analysts Consultants • Security Analysts • AI Developers

YOUR CONFERENCE REGISTRATION INCLUDES: Three continental breakfasts, three lunches, breaks, reception, T-shirt, conference backpack, and access to all sessions in co-located shows. On workshop days, only workshop attendees receive lunch.

SATURDAY, MARCH 24, 2017	
9:00am–4:00pm	Pre-Conference Workshops
SUNDAY, MARCH 25, 2017	
7:30am–4:00pm	Registration Opens
9:00am–4:00pm	Pre-Conference Workshops
6:00pm	Opening Keynote
MONDAY, MARCH 26, 2017	
7:30am–5:00pm	Conference Registration
7:30am–8:30am	Continental Breakfast
8:30am–9:45am	Keynote
9:45am–10:15am	Coffee Break, Expo Area opens
10:15am–11:15am	Breakout Sessions
11:15am–11:30am	Break
11:30am–12:30pm	Breakout Sessions
12:30pm–2:00pm	Lunch
2:00pm–3:00pm	Breakout Sessions
3:00pm–3:30pm	Break
3:30pm–4:45pm	Breakout Sessions
4:45pm–6:00pm	Expo Area Opening Reception
TUESDAY, MARCH 27, 2017	
7:30am–5:00pm	Conference Registration
7:30am–8:30am	Continental Breakfast
8:30am–9:30am	Breakout Sessions
9:30am–9:45am	Break
9:45am–10:45am	Breakout Sessions
10:45am–11:15am	Coffee Break, Expo Area open

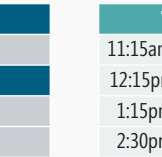
TUESDAY, MARCH 27, CONTINUED	
11:15am–12:15pm	Breakout Sessions
12:15pm–1:15pm	Lunch, Expo Area open
1:15pm–2:30pm	Keynote
2:30pm–2:45pm	Break
2:45pm–3:45pm	Keynote/Breakout Sessions
3:45pm–4:15pm	Break, Expo Area
4:15pm–5:15pm	Keynote/Panel
5:15pm–6:15pm	Expo Area open, Surface Laptop drawing
7:00pm	Evening Events
WEDNESDAY, MARCH 28, 2017	
7:30am–4:00pm	Conference Registration
7:30am–8:30am	Continental Breakfast
8:30am–9:30am	Keynote
9:30am–10:00am	Coffee Break
10:00am–11:00am	Breakout Sessions
11:00am–11:15am	Break
11:15am–12:15pm	Breakout Sessions
12:15pm–1:30pm	Lunch
1:30pm–2:30pm	Breakout Sessions
2:30pm–3:00pm	Ice Cream Break
3:00pm–4:00pm	Breakout Sessions and Panels
4:00pm–4:15pm	Break
4:15pm–5:00pm	Closing and Prizes
THURSDAY, MARCH 29, 2017	
9:00am–4:00pm	Post-Conference Workshops

150+ Sessions **75+ Microsoft and industry experts** **Full-day workshops** **Evening events**

Many paths to choose and technologies to embrace.
Your favorite experts will help you sort it out and make the journey easy! **Shirley Brothers**

A sampling of our keynote speakers and panel members

SCOTT GUTHRIE
Executive Vice President, Cloud and Enterprise Group, Microsoft



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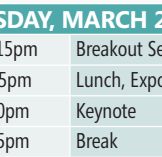
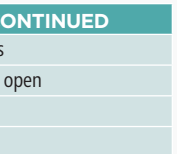


TIM HUCKABY
Founder/Chairman, InterKnowlogy



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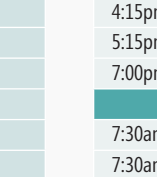
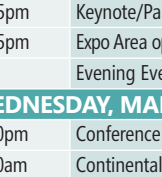
Principal Architect, Microsoft Database Systems Group, Microsoft



JOHN PAPA
Principal Developer Advocate, Microsoft



DAN WAHLIN
Founder, Wahlin Consulting

JASMINE GREENAWAY
Cloud Developer Advocate, Microsoft

RICHARD CAMPBELL
Co-host, *.NET Rocks!*

SCOTT HUNTER
Director of Program Management, Microsoft

MICHELE BUSTAMANTE
CIO and Architect, Solliance

AARON BERTRAND
Senior Consultant, SentryOne

PAUL YUKNEWICZ
Principal Group Program Manager, Microsoft

GROUP DISCOUNTS AVAILABLE

When more than three people from the same company are registering at the same time, call 203-264-8220, 9-4 EST, Monday through Friday to ask about your discount.

Software development continues to evolve, and so do the tools that make developing software easier! Quarterly updates to Visual Studio, new versions of Angular, and incremental changes to C#, as well as ASP.NET Core, means there are many new tools, technologies and techniques to learn. Boost your productivity and take advantage of the latest capabilities in the modern Microsoft stack!

The first quarter of 2018 is a great time to hone your skills and get ready for a future in software development that is coming fast! With the release of .NET Core 2 the foundation is set for a new .NET renaissance that spans web, mobile and desktop development. Microsoft is adding features to Visual Studio and the entire Microsoft development stack every few weeks. Have you checked out the latest?

This Spring's event will be exciting with Artificial Intelligence sessions delivered by Microsoft. More than any other technology that has preceded it, AI has the potential to extend our capabilities, empowering us all to achieve more.

DEVintersection is here with the best of industry experts and the engineers from Microsoft who create the products you rely on to help you get up to speed and into the future!

AI Keynote: See the Future through the Eyes of Computer Vision

Tim Huckaby — **InterKnowlogy**

Artificial Intelligence (AI) has the potential to be the most beautiful Technology every invented. Nevertheless, we are just on the cusp of this huge wave of AI innovation. We are AI technology pioneers. With existing solved problems in Artificial Intelligence and many more to come, we have the bold responsibility to amplify human ingenuity and solve some of the world's most difficult problems.

How is Computer vision, machine learning, and mixed reality designed into innovative software built on the latest and greatest emerging experiences?

Join Tim Huckaby in a demo heavy keynote focused on the power of Computer Vision: Designing, developing, and putting interactive AI solutions into production.

.NET Framework Improvements, Tips, and Tricks

Jeff Fritz — **Microsoft**

There's a lot of talk about the .NET Core framework, but what about the .NET Framework for Windows? With the recent releases of .NET and the Windows 10 Fall Creators Update, there are lots of improvements that you can use in your existing applications. Join us as we learn about the new features for Windows Forms, WPF, and ASP.NET developers in Visual Studio 2017 and Windows.

.NET in 2018 – Build Your Application and Run It Anywhere

Scott Hunter — **Microsoft**

Developing with .NET is easier than ever, and now you can run your applications on any platform thanks to .NET Core. Your existing knowledge of languages and frameworks can be re-used in all of the new places that .NET can reach. In this demo-filled session, you'll learn how to get started with .NET Core and the .NET SDK to build a simple set of tools that can be run everywhere from the cloud, to a Raspberry Pi and even on your refrigerator with Tizen. We'll also look at how your existing code can be re-used in all of these new places as well.

.NET Standard: The Easy Route to Platform Independence

Kathleen Dollard — **Microsoft**

Microsoft is moving to an Open Source and cross platform world, and they've created .NET Standard as a super-highway to get you there. With the .NET Standard 2.0 release, the specification includes most of the API's you depend on in the .NET full framework (.NET 4.n). Because .NET Standard, .NET Core, Xamarin and UWP are all embracing this standard, your class libraries can easily be cross-platform. In this session, you'll learn more about the goals of .NET Standard and how it differs from PCLs (Portable Class Libraries). You'll also see how to use the .NET Portability Analyzer to find any changes your app needs. To show that .NET Standard is not actual magic, you'll learn a little about how redirects support binary compatibility. And you'll learn what happens when an API just doesn't make sense on a particular platform and other potential pitfalls. You'll leave this session understanding why you care about .NET Standard and the path to move your applications to it.

6 Design Patterns to Improve Your Web Apps

Steve Smith — **Ardalis**

Design patterns provide common templates for solving similar problems. They also provide a higher-level language for software developers to use to describe approaches they might choose when designing part of an application. Learn several patterns useful to web application developers.

7 Ds of Development

John Papa — **Microsoft**

Are you done delivering that code? What is done? Are you confident it will stay up and running? Are you confident that the bug you fixed didn't break something else? Are you confident someone else could pick up your code and run with it? Writing code is the easy part, everything after it is the hard part. Following the 7 Ds of development will help you deliver higher quality product and make you feel more confident about saying "it's done."

Actors – The Past and Future of Software Engineering

Juval Lowy — **IDesign, Inc.**

The Actor Model is the latest fad to storm the software industry. But is there any substance behind it and why should you care? What are the drivers of the Actor Model and why have the large cloud vendors started offering Actor-based solutions? Juval Lowy puts it all together first by outlining the long-term trend in software methodologies that brought this 50-year-old computational model to the fore, and how the demise of Moore's Law coupled with the rise of the IoT will force us to abandon sequential programming. Juval will examine the origin of the Actor Model; demonstrate Actors using conceptual examples, outline emerging design patterns, point out common misconceptions and conclude with his views on the future of the Actor Model.

Check the conference website for the latest information, DEVintersection.com
Sessions and speakers are subject to change.

AI & Machine Learning in the Industry – Real-World Case Studies Using Microsoft Cognitive Services and Cognitive Toolkit (CNTK)

Dr. Adnan Masood — **UST Global**

AI and Machine Learning have disrupted every vertical industry imaginable including, but not limited to, FinTech, Healthcare, Retail, Automotive, Agriculture, Manufacturing, Media/Content, Education, and Consumer finance, to name a few. In this session, we do a deep dive in real-world case studies and discuss how companies are leveraging Deep Learning, Machine Learning, NLP Platforms, Predictive APIs, Image Recognition, and Speech Recognition for their business functions.

The session focuses on end-to-end machine learning solution lifecycle, and operationalization of enterprise AI implementations using Microsoft Cognitive Services, and Cognitive Toolkit in Customer Support, Security/Authentication, Fraud Detection, HR/Recruiting, Marketing, Digital Assistants, and Market Intelligence Tools.

AI for Businesses with the Search Capabilities of Cognitive Services

Microsoft AI Team

The Bing Search APIs of Microsoft Cognitive Services let you bring the intelligence and knowledge of the planet to your app in just a few lines of code. In this session, you'll learn how to implement Bing Custom Search for your business with custom scoping of queries and custom ranking of your results. You'll also get an overview of the other Search capabilities of Bing APIs and how easy it is to bring AI to your business

A Lap around Microsoft Cognitive Services Vision APIs

Tim Huckaby — **InterKnowlogy**

How would you like to learn how to leverage machine learning in countless Computer Vision use cases the easy way? Recently, Computer Vision Technologies have skyrocketed. Why? Machine Learning and a number of brilliant people working on Computer Vision.

Machine Learning is currently a hot topic and holds a bold promise yet to be truly exploited. But, no matter what your level of understanding of Machine Learning is, we all can agree that it is a broad technology whose pioneers and leaders have a very specific expertise in. In other words, it just does not make sense for all developers to be experts in machine learning. It is more important for developers to understand how to leverage machine learning in your applications.

The Vision APIs of Microsoft Cognitive Services are easy to implement, free to prototype and inexpensive to scale in production. There is a rich set of services and a comprehensive SDK. And best of all the Vision APIs leverage billions of dollars spent in Microsoft Research and cloud infrastructure.

The Vision of Microsoft Cognitive Services (formerly Project Oxford) is for more personal computing experiences and enhanced productivity aided by systems that increasingly can see, hear, speak, understand and even begin to reason.

Microsoft Cognitive Services are a set of APIs, SDKs and services available to developers to make their applications more intelligent, engaging and discoverable. Microsoft Cognitive Services expands on Microsoft's evolving portfolio of machine learning APIs and enables developers to easily add intelligent features – such as emotion and video detection; facial, speech and vision recognition; and speech and language understanding – into their applications. Take a lap around the features and functionality of the Microsoft Cognitive Services Vision APIs with Tim Huckaby to see how powerful these services are and how easy they are to implement in your own applications.

An Introduction to React

Elijah Manor — **LeanKit**

Facebook's React library has received quite a bit of attention lately. In this session, we will describe what React is, who uses it, and why it's a compelling technology to use.

After a high level overview, we will start to unpacking the ins and outs of React components (creation/JSX/props/state/etc) and then discuss some of the gotchas when first starting development.

> "My favorite part of React is what I loved about MooTools: to use it effectively you learn JavaScript, not a DSL: useful your whole career." *Ryan Florence*

React by itself is fairly small and not overly complex. For a more comprehensive Single Page Application you need much more than just React. To address this concern we will discuss Facebook Flux architecture, introduce the concept of Isomorphic JavaScript, and identify other libraries that are common when building a full application.

Application modernization with Microsoft Azure

Mikkel Mork Hegnhoj — **Microsoft**

Learn how Azure helps modernize applications faster with containers and how you can use serverless to add additional functionality while keeping your production codebase 'clean'. We'll also learn how to incorporate DevOps throughout your apps lifecycle, and take advantage of data-driven intelligence.

Architecting ASP.NET Core Solutions

Steve Smith — **Ardalis**

ASP.NET Core provides better support for clean, testable, maintainable architectures than any of its predecessors. Learn the underlying principles that apply to project/solution organization, how best to arrange your projects to support clean code, and how to refactor existing solutions toward this architecture.

Artificial Intelligence for the Pragmatic Developer

Zoiner Tejada — **Solliance, Inc.**

As a developer, you're probably thinking AI is something that only data scientists work on, and unless you want to go back to school and get a PhD in statistics, it's not for you. I'm happy to prove you wrong. If you are a developer building real-world solutions you are already two-thirds of the way towards leveraging the tremendous improvements in machine learning and artificial intelligence that have occurred in recent years. In this pragmatic session, we look at how you the developer can leverage Azure Machine Learning (including the newly announced Experimentation and Model Management Services) and the Cognitive Services into your overall Azure solution architectures. Machine Learning usually does not stand by itself in the solution…whether you are using as Azure ML as the foundation for a data mining effort, using it as web service to inform automated processes or simply employing ML directly to realize new, untapped values in your data, Azure ML sits as an important and integrated component of your solution architecture. New services such as those provided with Microsoft Cognitive Services speed your development time by providing you with sophisticated, fully trained models for performing speech, text, vision and recommendation functions with the ease of integrating a REST API can yield richer and deeper interactive

user experiences than was possible without having a specialized team with huge development budgets. Learn to bring intelligence to your solutions by attending this session!

Azure Diagnostics: Fixing Cloud Applications Issues and Performance on Azure

Paul Yuknewicz — **Microsoft**

If you want to be 10x more efficient solving cloud reliability and performance issues, this session is for you. We'll cover top issues we encounter in your application and infrastructure, and provide you with modern tools and techniques to effectively monitor, diagnose and fix these issues in all your environments, from dev-test to production at-scale. The session will cover our modern APM metrics and logging technology, Application Insights Profiler, and using the new Snapshot Debugger in production. Put on your seatbelts for this one!

Build a Customer Service Bot for Your Company – I Will Show You How

Daniel Egan — **Microsoft**

The absolute number one request for a bot is to have one that handles the 100 or 1000 most common requests in customer service. This allows not only quicker result times but allows your people to give better customer service. Come to this session to learn how to implement this for your company.

Build Your First Xamarin App in 75 Minutes

Robert Green — **Microsoft**

Xamarin enables C# developers to reuse their skills and build native mobile apps that run on iOS, Android and Windows. In this session, we will build a mobile app from scratch. You will see how to build the UI, handle navigation, connect to Azure, work with data when offline and how to deploy the app to multiple devices.

Building a Holographic Assistant with Bot Framework, LUIS & Mixed Reality

Nick Landry — **Microsoft**

Take your customers' bots beyond Skype, Slack, Microsoft Teams and Facebook and bring them into the real world with Mixed Reality. Why simply type-chat with a bot when you could actually look at them, talk to them and listen to their answers? HoloBot is an open source reusable Windows Mixed Reality Unity project for Microsoft HoloLens that acts as a holographic client for a chatbot. HoloBot has already been used in the pharmaceutical industry where lab scientists can lookup procedure documents using voice and gestures, and review those documents as holograms visible in their work space. This session is a deep dive into this 3D app that lets users interact with a 3D floating avatar using speech recognition, getting answers spoken back by the "bot" using Text-to-Speech. The commands sent to the bot are powered by the Microsoft Bot Framework via the Direct Line API, and parsed by LUIS from Microsoft Cognitive Services.

Bulletproof Transient Error Handling with Polly

Carl Franklin — **AppsVNext**

Connected applications only work when connected. What happens if the network breaks temporarily? Will your system recover smoothly or pitch a fit? Using an OSS project called Polly (available on GitHub) you can handle this and many other transient situations with elegance and fluency. Polly lets you define retry policies using standard patterns such as retry, retry forever, wait and retry, and circuit breaker. Learn how to make your system bulletproof with Polly and a little know-how.

Bundle All the Things! An Introduction to Webpack

Chris Klug — **tretton37**

As our web development code moves further and further towards the front-end, and the browser becoming more of a host for running complex programs, the need for managing our front-end resources becomes bigger...and harder. There are several ways to handle this problem, but currently it appears as though webpack is the way that people are gravitating towards.

Unfortunately, getting started with webpack offers a bit of a hurdle. Webpack configurations can look fairly complicated, and getting started can seem like a daunting task. However, with large JavaScript frameworks like Angular and Aurelia buying into it, we developers don't have much choice in a lot of cases. We pretty much have to understand it! In this session, you will get an introduction to how webpack works, the concepts behind it, and how to get started with it. The topic is too big to make you an expert in an hour, but hopefully you will walk out understanding the concepts well enough to both start configuring your own bundles and be able to understand the complicated bundle configurations you might run across.

C# 7.x Like a Boss!

Adam Tuliper — **Microsoft**

Hey – you – are you using C# to its fullest potential? Have you started yet on say... C# 6?

Well, it's time to look at C# 7 from a practical standpoint. Sure, we can look at a one-liner sample, but let's look at some real examples of where C# 7 can be used to solve a problem or just make your code better. Some of the new C# 7 features include pattern matching, local functions, tuples, and more. If you are wondering how some of this works behind the scenes, then fear not, we'll cover how some of this compiles.

Cognitive Search and Augmentation

Microsoft AI Team

Imagine a world where enterprises can search on all of their data at one time, no matter what the source, whether images, audio, PDFs, forms, etc. Data sources are often in raw, unstructured formats from different databases and there's a treasure trove of insights to be had. Microsoft Cognitive Services and Azure Search can be combined to do just that. Join this session to learn the future plans we have in Cloud AI to enable these capabilities for your customer.

Deploying Full-stack Applications to Azure – the Easy Way with PaaS

Brian Noyes — **Solliance, Inc.**

Whether you are building an Angular or React SPA, an ASP.NET MVC or NodeJS server web app, server APIs for your SPA, mobile, or desktop client, or building a batch-oriented back end process, Azure App Service combined with other Azure Platform-as-a-Service (PaaS) services give you a highly flexible, scalable, secure, and easy to use environment to develop, test, and deploy your applications. In this session you'll get familiar with the four types of Azure App Services: Web, Mobile, API, and Logic - and you'll learn how to combine them with other PaaS services like Azure SQL DB, CosmosDB, Blob or File Storage, message busses and hubs to build out a robust full stack application. You'll see how to use the features integrated into Visual Studio to deploy and debug these apps in the cloud environment, use the Azure web portal, or Powershell scripts to manage your cloud assets. And you'll also see how you can containerize your apps and deploy containers to Azure to provide better configuration management and decoupling to help with maintenance and operations.

Developing for Azure Using Visual Studio Code

Brady Gaster — **Microsoft**

With the introduction of .NET Core, many developers who have previously been married to Windows to do their .NET development are now investigating other platforms. By the same token, many non-Windows developers familiar with .NET are now interested in trying it out but want tools to blur the line between local and cloud-based development. This session will target both audiences and take an intermediate-level tour of how to get started developing .NET Core applications using Visual Studio Code and a series of command-line utilities and extensions. We'll also take a look at non-.NET scenarios enabled by the variety of extensions supporting Azure developers who want to use Visual Studio Code to build other types of applications, manage their databases, and connect their devices to their machines using code. This session is a great introduction to all the great things Visual Studio Code offers Azure developers at all experience levels.

Digital Transformation with Intelligent Bots

Microsoft AI Team

Bots and Conversational AI are transforming how people interact with software and services, and how business provide services, interact with employees and customers across all different languages and cultures. In this session, you will learn about Microsoft's toolkit for Conversational AI, how enterprises build chatbots with Azure Bot Service and Cognitive Services, real customer scenarios and case studies

Docker Containers on Azure – Let Me Count the Ways...

Michele Leroux Bustamante — **Solliance, Inc.**

There is already significant momentum in the industry toward building applications for containerized environments - with Docker leading the way. If you don't develop applications with containers and microservices architecture in mind, rest assured you will. Not all microservices architectures and Docker applications look alike, however, and there are choices to to level of necessary complexity and management to be considered. This session will provide an overview of the many ways you can deploy your Docker applications to Azure from the simple serverless approach through to container orchestration platforms and hosting options. You'll get a tour of Azure Container Instances, App Services for Containers, overall orchestration platform support in Azure including Docker Swarm, Docker EE, Mesosphere DC / OS and Kubernetes - including the managed service provided by Azure Kubernetes Service (AKS). By the end of this session you will get a taste of each option, and gain perspective on the design decisions that may lead to choosing between them.

Explore the Cosmos (DB) with .NET

Jeremy Likness — **Microsoft**

CosmosDB, formerly referred to as DocumentDB, is Microsoft's cloud-based NoSQL distributed database available on Azure. Learn how to build a .NET application to import data, stand up a RESTful API to access the data, and a single page application to access the data. Then see the application refactored to leverage Azure Functions and Blob Storage to create a truly serverless storage and compute experience in Azure.

Front-end Web Development in 2018, for the Front-endally Challenged Microsoft Developer

Chris Klug — **tretton37**

Front-end development for the web has changed a lot in the last few years...a LOT! Not necessarily for the better if you ask some, but at least to something different. With the relatively slow cadence in releases of Visual Studio, a lot of VS users have missed out on this shift. A lot of them still use NuGet for client-side resources and the ASP.NET Web Optimization Framework for bundling and minification. And even though this definitely works, and might even work very well, these are things that are changing. In this talk, you will get a walkthrough of the tools and technologies all front-end developing code monkeys should be aware of. Not necessarily use, but at least be aware of... Having that said, you will not get a list of them in this abstract, as they are likely to have changed by the time this talk is actually presented.

Get Git in an Hour

Jesse Liberty — **Independent Developer**

Students with little or no Git experience will learn Git through a GUI. This presentation includes introductory and intermediate Git topics, including creating a local and remote repository, cloning repositories, branching, merging, resolving conflicts, cherry picking, reversing commits, using tags, using the stash, command line from the terminal.

Get Started with ASP.NET Core APIs for Angular

Jasmine Greenaway — **Microsoft**

Are you currently working with ASP.NET and beginning to invest in Angular? How do you start sharing your ASP.NET Core features with your Angular applications? How does ASP.NET handle security? The ASP.NET team will show you how to light up these features using ASP.NET Core APIs and also how to secure your application using Identity.

Getting Started with Angular and the CLI

Dan Wahlin — **Wahlin Consulting**

Angular provides a robust framework for building Single Page Applications (SPAs) that can run on a variety of devices. With the framework adding many new features ranging from ES2015 and TypeScript support to a more efficient way to bind data, there's a lot of new concepts to learn. In this session, Google GDE Dan Wahlin will dive into key features and concepts such as data binding, components, directives, using ES6/TypeScript languages, building reusable services and more. If you're interested in getting a jump start on the Angular framework as well as seeing how the Angular CLI can be used to help you out then this session is for you!

Getting Started with Azure IoT Edge

Bret Stateham — **Microsoft**

Microsoft has been a leader in cloud based IoT services for a number of years. The heart of Azure's IoT offering is IoT Hubs. IoT Hubs provide a secure bidirectional communication service with devices in the field using standard protocols like HTTPS, AMQPS, and MQTTS. The open standards make it possible for many but not ALL devices in the field to communicate directly with IoT Hubs. For devices that don't have TCP/IP connectivity but may have Bluetooth, RF, or other communication capabilities a gateway device is needed. In addition, there is a common desire to do analytics and processing on device data without having to round trip to the edge. In this session, we'll see how Azure

IoT Edge (formerly the Azure IoT Gateway SDK) can be used to connect "edge" devices in the field to Azure IoT Hubs as well as how to move some of the analytics and filtering to the edge helping to reduce latency, bandwidth and costs when a round-trip to the cloud can be avoided

Getting Started with Blockchain Distributed Apps (DAPPs)

Bret Stateham **Microsoft**

Blockchain is fast becoming a popular alternative to traditional databases in applications where the integrity and lineage of data is paramount. Although it came to the forefront with Bitcoin, it doesn't just have to be used for trading crypto-currencies. And with blockchain platforms like Ethereum the blockchain can store code in the form of Smart Contracts. Using tools like Ethereum, Solidity, Truffle, TestRPC and more I'll show you how to get started developing Distributed Applications or DAPPs.

Getting Started with Node.js

Asim Hussain **Microsoft**

Full abstract being finalized. Visit our website for up-to-date information and session details.

Getting Started Developing .NET Cloud Applications on Azure Using Visual Studio

Andrew Hall, Paul Yuknewicz **Microsoft**

How easy is it to get .NET application to run in Azure? Do .NET applications run better in Azure, and how? In this talk we will walk through the unique enhancements we have built in to Azure for giving your .NET applications the best fit in the cloud. We'll show you a fast path to get existing apps up on Azure. We'll also show you how to build modern scalable cloud app patterns for Web App and worker microservices using Docker containers. We'll also show you how to be incredibly productive building, monitoring and debugging your app using Visual Studio.

Getting to the Core of .NET Core

Adam Tuliper **Microsoft**

.NET Core is truly a new technology that is fast, efficient, cross platform, and open source. It also shares many similarities with the .NET we've known and loved for years. This session explains exactly what .NET Core is but doesn't stop there. We'll dive deep into what the architecture and the runtime is – including how it works across different platforms like Windows. OSX, and Linux. This session will also explore how your apps are loaded and who hosts them, how the runtime finds tools to run commands on, and deeper subjects like: what the muxer is, getting true side-by-side deployment, runtime identifiers, the .NET Standard, and more.

Going Serverless on Azure – You Know, for Scale!

Joel Hulen **Microsoft**

So there's this buzz about "serverless." Does it help you develop certain types of applications faster? Yes. Does it have an attractive cost proposition where you only pay for what you use? Check. Does it mean that you don't have to manage resource allocation in the cloud, but focus instead on building that awesome service or app? Right again. These benefits of going serverless are all great. But one of the best features of all is how insanely easy it is to handle massive loads of data, requests, and compute demands, without lifting a finger.

In Azure, there are several technologies considered serverless. We will primarily be focused on Azure Functions for compute, Event Grid for messaging, and Azure Cosmos DB for data, all put to good use in a live demo. We'll also touch on some newer things like Azure Container Instances, and all the other great things that makes serverless so buzz-worthy, but then we'll focus on what really makes it special… you know, scale!

How to Build a Massively Scalable Globally Distributed App in Minutes with Azure Cosmos DB

Microsoft Azure Team

Earlier this year, we announced Azure Cosmos DB - the first and only globally distributed, multi-model database system. In this session, we will show you how you can take advantage of Azure Cosmos DB as your backend database, covering data replication across any number of regions, scaling for any number of reads/writes, and much more.

How to Hack a Node App?

Asim Hussain **Microsoft**

Thought hacking was hard? It's not, it's easy and I'm going to show you how! In this episode of CSI Orlando we'll investigate a series of hacking stories and break them down step-by-step to see exactly how they did it. By the end you'll walk away a little bit more scared and a lot more prepared with some great practices you can apply immediately to your own applications.

Improve Your Testing with Visual Studio 2017

Kendra Havens **Microsoft**

Come learn about significant enhancements recently brought to the testing experience in Visual Studio. This presentation will introduce and demo new features such as Real Time Test Discovery and the Hierarchy view in the Test Explorer. It will also go over the exciting capabilities added to Live Unit Testing such as the Skip test category as well as dive into a comprehensive demo of Live Unit Testing.

Introduction to AI with Azure Cognitive Services

Paige Bailey **Microsoft**

Want to harness the power of machine learning, but don't have a team of data scientists on staff? Azure Cognitive Services has you covered! Infuse your apps, websites, and bots with intelligent algorithms to see, hear, speak, understand and interpret your user needs – and use the language you feel comfortable with (C#, Python, R, more!).

In this session, we'll be walking through applied examples of Vision, Knowledge, Language, Speech, and Search. How old does Kevin Bacon look, really? Which pictures show a "cute fennec fox" versus a "cute red panda"? What does "Ich bin ein Berliner" mean in plain Mandarin? How many of the X-Men wear glasses? Learn the answers to these questions, and walk away with a collection of Jupyter notebooks with basic implementations of every Cognitive Service offering!

Introduction to ASP.NET Core

Jeff Fritz **Microsoft**

Let's take a look at what's new in ASP.NET Core 2.0! A number of improvements big and small are here, and we walk you through them in this demo-filled session. See how ASP.NET Core simplifies development, improves performance, and increases security. We show how getting started with ASP.NET Core is easy with the new Razor Pages app model. See how ASP.NET Core 2.0 works great for microservices hosted in container-based infrastructure. Also, see how ASP.NET Core 2.0 is even better with Microsoft Azure by providing seamless diagnostics with Application Insights and worry-free security with Azure Active Directory (AD), Azure AD B2C and Azure Key Vault. With minimal slides and lots of tech, we prepare you for the next generation of cloud powered web apps.

Introduction to Containers

Robert Green **Microsoft**

Containers provide a way of running an application in a controlled environment, isolated from other applications running on the machine and from the underlying infrastructure. They are a cost-effective way of abstracting away the machine, ensuring that the application runs in the same conditions, from development, to test, to production. In this session, we'll demystify containers. You will learn why and when you might use containers, how to use them with both existing and new applications, who are the major players and what support both Visual Studio and Azure provide.

Introduction to IdentityServer for ASP.NET Core 2.0

Brock Allen **Solliance, Inc.**

IdentityServer is a popular open source security token service framework written in ASP.NET Core that implements the OpenID Connect and OAuth2 protocols. It is used to authenticate users via single sign-on and to secure web APIs. It is designed for extensibility and customization and allows applications to satisfy their custom security requirements for single sign-in and API security. It can be used stand-alone or in conjunction with other identity providers (such as Google, Facebook, AAD, ADFS, Auth0, and others). Come to this session to be introduced to the basics of using, hosting, and configuring IdentityServer to secure your applications and APIs.

Language & Artificial Intelligence for C# Enterprise Developers

Jerry Nixon **Microsoft**

Recurrent Neural Networks (Language and text) made easy. Be amazed. The accelerated state of computation and mathematics are to a point where our mountains of data can be transiently interrogated for new trends and predictions. Language and text, though, is a special problem. Handling text from bots, voice commands, translation, and reliable sentiment analysis was once only accessible to high-end data scientists and spy movies. Today, simplified services wrap sophisticated systems with standard REST endpoints; they make language processing available to every developer, every app, and every enterprise. Discover the opportunity: Tomorrow, artificial intelligence will be as commonplace and transparent as multitasking, containers and garbage collection. In this session, learn where AI in Language is headed, but, most importantly, how you can use bite-sized artificial intelligence services in your apps right away.

Lessons Learned from Real-World HoloLens & Mixed Reality Projects

Nick Landry **Microsoft**

Developing mixed reality experiences for HoloLens & Mixed Reality (MR) headsets sounds fun in theory, but how does this translate to the real-world? This session is designed to assist teams who are exploring their first MR projects by drawing from lessons learned in the field when working on customer projects for HoloLens & MR. We'll discuss the MR opportunity for .NET developers, what role they can play in MR development, and what an ideal MR development team looks like in comparison to a typical enterprise dev team. We'll also look at how MR solutions can be integrated with cloud services and other systems to create real enterprise solutions. Lastly we'll explore how you can execute your first MR projects as hackfests for fast results, and we'll talk about design considerations, development tips & tricks, and common pitfalls to avoid. Applications in Mixed Reality span a wide range of industries, from construction, architecture and manufacturing, to healthcare, pharma, education and more. Regardless of what projects you work on today, come learn how Mixed Reality can open a new chapter in your career.

Living Happily Together: Visual Studio and Angular

Brian Noyes **Solliance, Inc.**

Due to the build requirements for Angular apps, it is not easy to figure out how to create your Angular projects so that you can work on them both from your favorite editor and command line tools, as well as in the Visual Studio IDE. In this session, you will learn about the awesome JavaScript Services templates created by Microsoft to make this smooth as silk. These templates let you create your project so that it can be easily built and deployed from the command line or using Visual Studio Tooling, allowing everyone on your dev team to use the tool chain of their choice, while still having the power of the Visual Studio IDE to take advantage of simpler publishing of your app to the cloud and integration with other projects such as your back end Web APIs.

Make CSS Fun with SASS

Todd Anglin

Full abstract being finalized. Visit our website for up-to-date information and session details.

Microservices, Angular, ASP.NET Core and Docker

Dan Wahlin **Wahlin Consulting**

In this session, Microsoft MVP and Docker Captain Dan Wahlin will introduce the role microservices can play in today's enterprises and the pros/cons of using them. Learn how an Angular client can call into "microservices", how to create a RESTful microservice using ASP.NET Core and other technologies and the role Docker containers and Docker Compose can play in the process.

Microservices, Event Hubs, Functions and CosmosDB – A Match Made in Eventual Consistency Heaven

Michele Leroux Bustamante **Solliance, Inc.**

Microservices are not for everyone, but there are some incredible benefits to employing microservice architecture principles to enable co-evolution of services and features and reduce friction during the DevOps cycle. The growth of moving parts, however, does require tight DevOps procedures, and visibility into system operations including diagnostics, application events and audit trail. Event streaming can enhance your solution enabling async processing and scale, but also enhancing visibility to the solution as a whole. The good news is that if you are already designing a solution based on microservice principles, you are already positioned to incorporate events with less pain. Services that "fit in your head" lead to a manageable approach to introducing event-based strategies. In this session, you'll learn how to design a microservices solution with Docker, that relies on event streams to produce workflow state, eventual consistency, history and full audit. This session will focus on implementations that are Azure-based, leveraging EventHubs, Functions and CosmosDB for the back end to a Docker-based microservices solution.

ML for Developers in a Hurry

Scott Stanfield — **Independent Consultant**

Coming from a .NET enterprise world doesn't prepare you for machine learning and AI, so it's tempting to pass it by. But you might be better equipped than you think.

You probably wrangle messy CSV files all the time. Denormalize data for reports. Maybe look for patterns with first and second statical moments in one column (that's just the mean and deviation). You might compare two columns to see how often they "line up" (correlate).

I know you've hand-coded some crazy business logic, intuiting there's probably an easier way, using existing data.

I'm writing the talk I wish I had seen 5 years ago, when I started learning this exciting new field.

I'll catch you up, from univariate analysis, correlations, simple linear regressions, then up to the big guns, gradient boosted trees (Microsoft's XGBoost) and Deep Learning. We'll use web resources, live coding and animations to make it click in a fun way.

If you want a pre-reading assignment, start with the big book, *Computer Age Statistical Reasoning*, particularly § 1, 2, 8, 12, 17, 18, 20, Epilogue. There's 60+ years of good work by maths, stats and compute folks in there. Free PDF from Stanford at *http://j.mp/CASI-book*. It's deep. You'll come back to it later.

Mobile DevOps with the Microsoft Stack

Abel Wang — **Microsoft**

DevOps is the union of people, process and our products to enable continuous delivery of value to our end users. Nowhere is this more important than the world of mobile apps. However, mobile presents its own set of unique challenges. See how Microsoft simplifies this entire process with Visual Studio Mobile Center. Visual Studio Mobile Center acts as your mission control center for mobile DevOps. With just a couple clicks implement the full DevOps stack. Continuous Integration, Continuous Testing, Continuous Delivery and Continuous Learning with integrated and easy to use dashboards.

Modern Front-end Web Development in Visual Studio 2017

Jeff Fritz — **Microsoft**

A lot of work has gone into making Visual Studio 2017 the fastest and most productive version ever. Join us for a tour of the new features for web developers that makes writing modern web applications easier, more productive and fun. We look at new techniques like "dotnet new angular" and see how ASP.NET Core and Visual Studio 2017 are a great partner for your front-end web development needs.

Modern Web and Cloud Development with .NET

Andrew Hall — **Microsoft**

Containers are changing the way software is deployed in production. In this talk we'll cover how to use Docker and other container technologies to modernize the way you deploy your software to production. We'll cover the basics of containers development, including the Visual Studio family of tools for developing containerized apps. We'll then discuss how to setup a continuous deployment pipeline hosting options available for running containerized apps.

Modernizing Applications with Docker

Shayne Boyer — **Microsoft**

Gain some significant benefits from the cloud without changing the core architecture of your application. During this initial modernization, you also can add assets from the cloud. You can add monitoring, with tools like Azure Application Insights; CI/CD pipelines for your app lifecycles, with Visual Studio Team Services; and many more data resource services that are available in Azure.

Module vs Module

Deborah Kurata — **Independent Consultant**

What is the difference between ES modules and Angular 2 modules? This session answers that question and outlines best practices for using Angular modules. We'll look at how to refactor an application into multiple feature modules for clear organization and examine how to lazy load our modules.

Moving Application Development and Testing to the Cloud

Jay Schmelzer, Luca Bolognese — **Microsoft**

Not every organization and application is ready to move to cloud for production for a variety of reasons. In this session, we'll show you how organizations that have on-premise deployments are still able to take advantage of the cloud to create a productive and consistent environment for developing and testing their applications.

Ngrx and Angular Application State

Ward Bell — **IdeaBlade**

What's all the noise about ngrx, the Angular version of React's Redux? Do you need it? What's wrong with how you manage client-side state now?

This session will help you answer those questions for yourself. I'll explain what ngrx is, with examples, call out some consequences, relate ngrx to alternatives.

Pair Program with Fritz and Friends

Jeff Fritz — **Microsoft**

Jeff Fritz brings his live stream from Twitch to DEVintersection in this interactive session. Jeff and a guest will build a simple ASP.NET Core CMS and answer your questions about anything .NET or Visual Studio LIVE. Nothing is off-limits, and we'll work through the project on stage and YOU can contribute. You'll not only learn how to build a simple ASP.NET Core application, but also have all of the source code at the end of the session, and even be listed as a contributor to the final project. Bring your laptop fully charged, your questions, and join the group working together.

React Patterns and Practices

Elijah Manor — **LeanKit**

Getting started with React doesn't take very long, but there are a variety of other patterns and practices that you, as a developer, will need to understand and tackle.

After this session, you will be exposed to the following concepts that are helpful when creating a large front-end React application:

- Knowing the difference between Container and Presentational Components
- Stateless Functional Components
- Using High Order Components or Function as Children
- Assessing Performance Bottlenecks
- Integrating Immutability into your Application
- Adding redux & redux-devtools
- Adding react-router

RxJS Observables in Angular

Ward Bell — **IdeaBlade**

Client web applications are rich in events. Button clicks, keystrokes, and mouse moves are events. The data returned from an HTTP request arrives as an event. App components can send and receive messages through an event bus. Every page navigation is an event. Animations emit start and stop events. Events are everywhere.

RxJS Observables are the preferred way to manage events in Angular applications and many Angular APIs return RxJS Observables.

This session covers the basics of RxJS observables (the NEW 5.5 syntax!) for Angular developers. You'll learn how to work with Angular observable APIs, which RxJS operators you should know, and how to write your own observable APIs.

Sophisticated Use Cases for Custom Vision

Microsoft AI Team

When we announced the preview version of Microsoft Custom Vision at Build last May, we showed how customers can train a custom machine learning model with images from their own data stores. A retailer or manufacturer could train a model with photographs of their products. Images are then sent to this model, and a prediction is returned as to the matching item. Enterprises have complex computer vision scenarios that require manual, labor intensive tasks to complete---let's learn how they can automate these tasks with accuracy and at scale.

Survive the Titanic with Machine Learning

Scott Stanfield — **Independent Consultant**

RMS Titanic sank on April 15, 1912: over 700 of the 2200 passengers survived. Why? Although some element of luck was involved, some passenger groups were more likely to survive than others, namely women, children and the upper-class.

I'll do a complete walk through, from scratch, building a temporary machine-learning rig in the cloud, to find the best ML algorithm to save those passengers!

Our toolkit will be Linux, Microsoft R Open 3.4, Microsoft LightGBM (maybe), and vim.

The Architect

Juval Lowy — **IDesign, Inc.**

The software industry is in a deep crisis. Projects suffer from low quality; schedule slips and cost overrun are common. But this is hardly ordained, since there are plenty of examples of projects done on schedule, on budget, on quality in a repeatable manner. The key for solving the crisis is to practice software development as an engineering discipline, just like it is done in mechanical or electrical engineering. That is exactly the responsibility of the modern software architect, which must address software systems from an engineering standpoint, applying age-old engineering practices to software development. Armed with that crucial observation Juval will share his perspective on what is the key set of skills required of the architect, the role architects have to plan in order for the project to succeed, what it implies both to companies and to individual architects, and how should architects navigate and manage their own career path and personal growth.

The Many Adventures of Angular Routing

Deborah Kurata — **Independent Consultant**

The Router can do so much more than just route the user between the views of our applications. In this presentation, we'll look at many of the other features and capabilities of the Angular router.

The Team Data Science Process (TDSP) and DevOps for Data Science

Speaker TBD

Most data science discussions start with everything in place, data loaded, and ready to be analyzed. But in the real world, it's hardly that simple. There are many surface areas to take care of, from networking to security to data ingress patterns and more, that have to be thought out, planned, prepared and managed. The team that manages standard developer operations, or DevOps, is often pressed into service for these tasks, but there are many ways that a data science project differs from a standard application – and you need to know how to work with the DevOps team or perhaps even take that on yourself for advanced analytics.

The Whirlwind Tour of Authentication and Authorization with ASP.NET Core

Chris Klug — **tretton37**

Authentication and authorization is not a fun topic for most people. It is generally that thing that has to be there, but nobody really cares about. And on top of that, every time the requirements are a little different. And every time we have to figure out how to write all the plumbing to get it done properly. It is security after all...

In ASP.NET Core, Microsoft has made it fairly easy to get it all done. In most cases, it is only a few lines of code and some minor configuration, and you are up going. However, if you don't know the lines of code and the config, it can be hard. In this presentation, you will see a whole heap of different types of authN and authZ being configured and used. There will be social logins, local logins, AD-based logins, and even token based authentication for SPAs. Basically, everything you need to get up and running when it comes to authenticating your users in ASP.NET Core.

Top 10 Things Developers Need to Know about Azure Active Directory

Chris Givens — **Microsoft**

Azure Active Directory (AAD) has become one of the most widely used and popular ways of authenticating to both Microsoft and non-Microsoft services. This session will explore 10 amazing and exciting things about Azure Active Directory that will support your custom application development and security needs.

TypeScript for C# Programmers

Jesse Liberty — **Independent Developer**

TypeScript is the language of choice wherever you might have used JavaScript. Traditionally, TypeScript is taught from the perspective of JavaScript programmers, but this course is targeted at C# programmers who bring different experience and different challenges. Topics include the fundamentals and how they differ from C#, creating and using classes and objects, interfaces, inheritance, etc.

Check the conference website for the latest information, DEVintersection.com

Sessions and speakers are subject to change.

Using the Azure Bot Service to Create Intelligent Bots

Zoiner Tejada — **Solliance, Inc.**

Bots are powering a new way to converse and interact with users, whether you are ordering pizza with an emoji via text, remotely checking into your hotel room or searching for information. Bots can power both text based and voice activated conversations so users can leverage the mode most convenient to them. In this session, we'll take a journey building a solution that leverages Cortana, the Microsoft Bot Framework, Microsoft Cognitive services and most importantly the Azure Bot Service to make an application come alive to spoken and typed conversations.

Vision & Artificial Intelligence for C# Enterprise Developers

Jerry Nixon — **Microsoft**

Convolutional Neural Networks (Vision and imaging) made easy. Be amazed. The accelerated state of computation and mathematics are to a point where our mountains of data can be transiently interrogated for new trends and predictions. Vision and imaging, though, is a special problem altogether. Handling images, scans, pictures, and videos was once only accessible to high-end data scientists and spy movies. Today, simplified services wrap sophisticated systems with standard REST endpoints; they make vision processing available to every developer, every app, and every enterprise. Discover the opportunity: Tomorrow, artificial intelligence will be as commonplace and transparent as multitasking, containers and garbage collection. In this session, learn where AI in Vision is headed, but, most importantly, how you can use bite-sized artificial intelligence services in your apps right away.

Vue.js – The Next Big Thing In JavaScript

John Papa — **Microsoft**

If you feel like modern web development with Angular and React has gotten way too complicated, Vue.js might be the JavaScript framework for you. With over 10K stars on Github, Vue.js has vaulted out of relative obscurity to find companies such as GitLab choosing to use it over React. In this session, we'll take a look at why Vue.js is so popular, what makes it different from Angular and React and how easy it is to stand up and deploy a simple Vue.js application. Vue.js is a brilliant piece of JavaScript engineering, and it just might make you rethink your next app.

What exactly are Data Science and Deep Learning Virtual Machines?

Paige Bailey — **Microsoft**

What is the difference between machine learning and deep learning? When should you use one versus another? How should you provision hardware for typical machine learning projects, and what are the advantages / disadvantages of each configuration?

If you've heard about things like TensorFlow, Spark, Jupyter Notebooks, and the Azure Machine Learning Workbench, and what to know where they would fit in your organization, this is the talk for you.

What's New in C#

Kathleen Dollard — **Microsoft**

Even if you have been using C# for years, it's time to learn some new habits. C# 7 and C# 7.1 are in your hands if you've installed the latest tools. Everything you've always done continues to work, but you can do better. In this session, you'll learn how the latest features in these new versions of the language will make you more productive. You'll see demos of all the new features in scenarios that you can use immediately. By the end of the session, you may even have a few new favorite features.

Why You Should Use F#

Phillip Carter — **Microsoft**

F# is a functional programming language that runs on .NET. It is a perfect fit for developing backend services on .NET Core, modeling complex domains, and dealing with difficult data access problems. In fact, it powers the backends of some of our top customers in Azure! In this talk, we'll introduce F# on .NET Core while walking through its benefits, talk about the excellent support it has across multiple tools, and show how it's a perfect fit for your next backend service. Come see what F# has to offer you!

Yes, VS Code Can Do That!

John Papa — **Microsoft**

How do you debug so easily in VS Code? What's are those key combinations to edit code so quickly? What extensions are the ones I shouldn't code without? Get ready to hit the ground running in this fast-paced, demo-heavy talk that takes you through some of the best and most efficient tips and tricks in VS Code. Learn how to setup your environment and customize it the way you like it. You'll walk out with several tips on how to be more efficient with one of the hottest tools on the Web today!

Your Mouse is Stealing Your Time

Jeremy Foster — **Microsoft**

Tapping keys. It's the one thing every developer on every platform in every language does countless times per day, and the general rule is that fewer taps are better. This one cross-cutting concern is ripe with opportunities to improve your productivity and efficiency.

In this session, we'll look at...

- How to move more of your tasks to the command line
- How to identify and automate especially time-sucking tasks
- How to commit keyboard shortcuts to memory
- How to start using keyboard shortcuts where you couldn't before
- How to use the keyboard on tasks you might not today such as managing github repos, browsing the operating system UI, fetching data from the web, and even moving your mouse cursor
- How to improve your overall development speed

Zero to DevOps

Abel Wang — **Microsoft**

DevOps is the union of people, process and our products to enable continuous delivery of value to our end users. This is ridiculously important in our world today but is very difficult to do right. Come see how to implement Zero to DevOps for any language, any platform with the Microsoft Stack. This talk features many war stories, real world successes as well as many fast paced demos using C#, Java, Node, Containers etc.

Our SQLintersection Spring 2018 line-up is packed with eight full-day workshops over 3 days (2 preconference days and 1 post-conference day) as well as over 40 technology-focused (NOT marketing) sessions from which to choose. You'll learn proven problem-solving techniques and technologies you can implement immediately as well as learn about the future of SQL Server. Our primary conference focus is around performance monitoring, troubleshooting, designing for scale and performance, cloud, as well as new features in SQL Server 2016 and SQL Server 2017. It's time to determine your migration strategy and this is the place to figure out how best to do that with the smallest impact and biggest gains!

And, unlike some other conferences, SQLintersection speakers are all real-world consultants, members of the Microsoft product development or Microsoft customer service / support teams who are also known as the best speakers in the SQL Server community! If you want practical development from REAL experts, this is the place to be!

KEYNOTE
SentryOne Tools for Productivity and Performance

Level: 200

Aaron Bertrand and Jason Hall — **SentryOne**

Whether you are hosting in your office, in a data center, or in the cloud, SentryOne covers monitoring, alerting, and tuning to help you get the most out of your servers – including servers that aren't running SQL Server. In this session, your hosts will guide you through time saving strategies for managing performance across hybrid environments - whether you are running physical or virtual servers, SQL Server, Azure SQL Database, APS, or Azure SQL Data Warehouse. You will see demonstrations of SentryOne software highlighting configuration and performance pitfalls, and leave with a better understanding of performance problems you may be currently missing. SentryOne provides a unified management experience; it's your ONE platform for physical, virtual, and cloud performance.

KEYNOTE
Experience SQL Server 2017: The Modern Database Platform

Bob Ward — **Microsoft**

SQL Server is no longer just a relational database management system. It has become a platform for data, both in your cloud and ours. This session will discuss all the new features and capabilities of SQL Server 2017 including SQL Server on Linux, Docker Containers, Graph Database, Python, Adaptive Query Processing, Automatic Tuning, and new HADR capabilities. We will even talk about few hidden gems included in the release. This session will contain demos that showcase these capabilities and we will close the session with a discussion of SQL Server Futures and Roadmap.

Check the conference website for the latest information, DEVintersection.com

Sessions and speakers are subject to change.

SQLintersection Closing Panel & RunAs Radio Recording

Level: All

Hosted by Richard Campbell of *RunAs Radio* and featuring Bob Ward, Paul S. Randal, and Kimberly L. Tripp with cameos from other SQLintersection speakers

Bring your remaining questions to our closing panel and have some great fun with this highly interactive and always entertaining session hosted by Richard Campbell of *RunAs Radio*. Check out our past show recordings:

- Fall 2013 SQLintersection here: http://runasradio.com/default.aspx?showNum=341
- Spring 2014 SQLintersection here: http://www.runasradio.com/default.aspx?showNum=369
- Fall 2014 SQLintersection here: http://www.runasradio.com/default.aspx?showNum=397
- Spring 2015 SQLintersection here: http://www.runasradio.com/default.aspx?showNum=423
- Fall 2015 SQLintersection here: http://www.runasradio.com/Shows/Show/447
- Spring 2016 SQLintersection here: http://www.runasradio.com/Shows/Show/474
- Fall 2016 SQLintersection here: http://runasradio.com/Shows/Show/506
- Spring 2017 SQLintersection here: http://runasradio.com/Shows/Show/536
- Fall 2017 SQLintersection here: http://www.runasradio.com/Shows/Show/558

Advanced Data Recovery Techniques

Level: 400

Paul S. Randal — **SQLskills**

Disasters happen – plain and simple. When disaster strikes a database you're responsible for, and backups and repair fail, how can you salvage data, and possibly your company and your job? This is where advanced data recovery techniques come in. Using undocumented tools and deep knowledge of database structures, you can manually patch up the database enough to extract critical data. This demo-heavy session will show you advanced methods I've used extensively over the years to salvage data for real-life clients after catastrophic corruption. You won't believe what it's possible to do!

Artisanal Indexes: Filters, Views, Computed Columns

Level: 200

Brent Ozar — **Brent Ozar Unlimited**

Most of the time, conventional clustered and nonclustered indexes work well - but not all of the time. When you really need to push performance, hand-crafted special index types can give you an amazing boost. Learn the catches behind filtered indexes, indexed views, and computed columns.

An Introduction to Azure Managed Instances

Level: 200

Tim Radney — **SQLskills**

Have you been hearing about Azure Managed Instances and want to know what all the fuss is about? Come see how Managed Instances are changing how we think about cloud databases. Managed Instances can be considered a hybrid of Azure SQL Database and on-premises SQL Server with all the great benefits of Platform as a Service (PaaS). You'll see first-hand how easy it is to migrate databases from on-premises to a Managed Instance. We'll explore the differences between Azure SQL Database, Managed Instances, and SQL Server on an

Azure VM to help you determine which is the best fit for your organization's requirements. If you've been considering Azure for your organization, this session is for you!

Azure SQL Database for the Production DBA
Level: 200

Tim Radney — **SQLskills**

Have you been wondering what Azure SQL Database is and what it means for you as a production DBA? Azure SQL Database is an Enterprise-ready database platform that provides relational database-as-a-service. In this session, you'll get a grounding in the fundamentals of Azure SQL Database from a DBA perspective. First, you'll learn how to create an Azure SQL Database using the Azure Portal and an approach for sizing a new Azure SQL Database. Then, you'll learn some of the similarities and differences between on-premises SQL Server and Azure SQL Database. Finally, you'll see how monitoring and performance tuning Azure SQL Database differs from on-premises SQL Server. If you've been considering Azure SQL Database for your organization, this session is for you!

Building a Better Backup Strategy
Level: 200

Paul S. Randal — **SQLskills**

Database backups are often critical for recovering from a disaster, but there are lots of misconceptions about how backups work and what a good backup strategy is. The purpose of taking backups is, of course, to be able to restore them at some point—but that can sometimes be easier said than done, depending on what you want to be able to restore. In this session, Paul will explain how the three most common types of backups work and how they can be combined into effective backup strategies. Paul will also cover how restore works and what you can do to make your restores run faster. This session provides the knowledge you need to make sure you can recover within your downtime target.

Common SQL Server Mistakes and How to Avoid Them
Level: 200

Tim Radney — **SQLskills**

Making mistakes is natural, but learning from them and avoiding them in future takes effort. There's no substitute for experience or the shared wisdom of others to help you learn what mistakes to avoid. In this session, Tim will share with you a ton of what he's learned over the years from working and consulting at multiple Fortune-level companies. You'll hear about real-world environments he has worked on where there was a high impact from administrators making mistakes in how SQL Server was configured and administered. You'll learn many proven and accepted best practices for installing, configuring and supporting SQL Server to help your environment run as smoothly as possible and you'll leave with a checklist of items to take home to make sure your SQL Server environment is configured properly.

Conquering Concurrency
Level: 300

Tim Chapman — **Microsoft**

There is so much more to writing faster SQL Server applications than just tacking on a NOLOCK hint to queries. This session will thoroughly discuss what isolation levels mean in the SQL Server universe, how interaction between resources occurs in each isolation level, as well as different adverse effects to each isolation level. The session will include the common SQL Server isolation levels as well as the lesser-known optimistic isolation levels as well as how multi-version concurrency control works with In-Memory OLTP.

Conquering Columnstore Indexes
Level: 300

Tim Chapman — **Microsoft**

Introduced in SQL Server 2012, Columnstore Indexes have the power to completely transform a reporting environment. These indexes offer a solution for your reporting workload with an order of magnitude better data compression and query performance over traditional tables and indexes. SQL Server 2016 significantly enhances these indexes so that you can take advantage of them with your OLTP workload to enable something known as Operational Analytics. This session will dig into what Columnstore Indexes are, how they are implemented, and the advantages of using this technology in SQL Server 2016.

Corruption Survival Techniques
Level: 200-300

Paul S. Randal — **SQLskills**

Your database is corrupt - what do you do? Well, it depends! How critical is the data? Do you know what's really wrong with the database? What does all that DBCC CHECKDB output mean? Should you restore or repair? It's all about limiting downtime and data-loss when a corruption occurs - from knowing the tools to understanding the implications of choices you make. In this demo-heavy session Paul will give you insight into how to recover from corruption without making things worse. Most importantly you'll get step-by-step instructions for dealing with the more common scenarios.

Deep Dive into Locking, Blocking & Latches
Level: 400

Gareth Swanepoel — **Microsoft**

This topic sounds scary, but it's not. Regardless of whether you have a small database with only a few users, or a large multi-tenant system, you have Locking, Blocking, Latches, and Spinlocks. Understanding what they are and how they work is the first step in understanding how to troubleshoot them. Deadlocks are a problem, but they are a problem we can fix. In this session, we will explain and investigate how to find and fix the problems that we see in our database every day.

Dynamic SQL: Building, Tuning, and Testing It Better
Level: 200

Brent Ozar — **Brent Ozar Unlimited**

Dynamic SQL is one of the most powerful tools in the database developer's arsenal. After working with it for over a decade, I'll share my tips and tricks.

Estimates & Statistics: Parameters, Literals, and Variables
Level: 200

Kimberly L. Tripp — **SQLskills**

When SQL Server processes a query, it can be difficult to understand "why" it processed your query/procedure the way in which it did. One of the first things looked at is the "estimate" of rows. When the estimate is off from the actual – statistics are often blamed. Come to this session to understand how parameters, literals, and variables are evaluated and estimated. Understanding how to best troubleshoot these problems is the first part of the problem... once you can determine the source of the problem, then you can determine how to fix it. This session is all about understanding estimates based on how your queries and procedures are both written as well as executed.

Experience SQL Server and Azure SQL Database: The Fast and the Furious
Level: 300-400

Bob Ward — **Microsoft**

Is your database slowing down your business? Are you using Linux as a platform but can't find the right database that meets your performance needs without busting your budget? Built on the industry recognized "It just runs faster" SQL Server 2016 engine, SQL Server 2017 and Azure SQL Database provide new capabilities for performance, value, and choice. In this session, we show you features and a "behind the scenes look" at what powers SQL Server 2017 for Linux, Windows, and Azure SQL Database to give you the "speed you need". And if you are a database expert and want to tune the SQL Server engine to its maximum turbocharged capacity, we show you the tools, diagnostics, and techniques that make SQL Server 2017 and Azure SQL Database the ultimate database platform choice to run your applications at a fast and furious speed.

Experience SQL Server on Linux and Containers
Level: 300-400

Bob Ward — **Microsoft**

SQL Server 2017 is all about choice. It now runs on the most popular platforms in the world: Windows, Linux, and Docker Containers. In this session, we will focus on the specific features, architecture, and guidance for running SQL Server on Linux and Docker Containers. You will walk away with an understanding of how we built SQL Server on Linux and how it runs in a unique way that allows developers to focus on their applications vs the specifics of the design. We will also look at how Docker Containers work so you can see the unique value proposition this provides to developers using SQL Server. As with any advanced session, we will have demos including debugging sessions to show you how the design works.

From Zero to Hero: Troubleshooting SQL Server Performance Made Easier
Level: 200

Pedro Lopes — **Microsoft**

Take charge of any performance issue coming your way. "SQL Server is hurting!" Turn feelings to symptoms, and become the hero that saved the day. Streamline the process of troubleshooting performance issues with new tools and capabilities, for faster insights and effective turnaround.

Topics covered include:

- Query Performance troubleshooting fundamentals.
- Analyzing query plan properties (Getting the execution context – what properties are available and what do they give you in showplan).
- Analyzing query plan properties (warnings and context, runtime stats).
- Bringing it all together with lightweight profiling and live troubleshooting scenario.

Functions: Why 2 out of 3 Functions Don't Scale
Level: 200

Brent Ozar — **Brent Ozar Unlimited**

Good developers are taught to reuse their code by putting it into functions. Unfortunately, SQL Server's scalar functions and multi-statement table-valued functions have horrific performance downsides that you just can't fix. You'll learn how to tell whether functions are killing your queries, and how to work around them.

Getting Started with Azure Infrastructure as a Service (IaaS)
Level: 200

Tim Radney — **SQLskills**

Do you need better scale and availability for your SQL Server environment? Azure Infrastructure as a Service can help. Come learn how easy it is to configure Azure virtual machines and migrate your workloads. This session will show you how to select the proper machine size and how to benchmark your environments, as well as discuss various methods to migrate from on-premises. We'll also take a look at the built in monitoring features available within the Azure Portal to keep tabs on your environment. If you've been considering Azure IaaS for your organization, this session is for you!

Hardware 301: Diving Deeper into Database Hardware
Level: 300

Glenn Berry — **SQLskills**

Making the right hardware selection decisions is extremely important for database scalability. Having properly sized and configured hardware can both increase application performance and reduce capital expenses dramatically. Unfortunately, there are so many different choices and options available when it comes to selecting hardware and storage subsystems, it is very easy to make bad choices based on outmoded conventional wisdom. This session will give you a framework for how to pick the right hardware and storage subsystem for your workload type. You will learn how to evaluate and compare key hardware components, such as processors, chipsets, and memory. You will also learn how to evaluate and compare different types of storage subsystems for different database workload types. This session will give you the knowledge you need to make sure you get the best performance and scalability possible from your hardware budget!

High Availability/Disaster Recovery 101
Level: 100-200

Glenn Berry — **SQLskills**

How do you design a SQL Server 2017 infrastructure in order to meet specific Recovery Time Objective (RTO) and Recovery Point Objective (RPO) service levels? There are many aspects to consider, from technology choices and licensing, to policies and procedures. This session outlines and compares the various HA/DR technologies available in SQL Server 2017, showing how you can combine them to design and build a solution to help meet your HA/DR goals. This session also teaches you how to formulate policies that enable effective use of technology in your organization.

Hitting the Turbo Button with In-Memory OLTP
Level: 200

Justin Randall — **SentryOne**

In-Memory OLTP is one of several "new" SQL Server technologies designed to help you make your applications just go faster. In this session, we will demonstrate the speed improvements possible using memory-optimized tables, common use cases, and steps to migrate on-disk tables to in-memory tables.

In-depth Temporal Tables in SQL 2016
Level: 200-300

Ben Miller — **Independent Consultant**

Have you ever wanted to know what the data looked like yesterday before a change was made? Have you cringed at the thought of creating triggers to get data changes logged for later analysis? Looking at a new feature in SQL 2016 called Temporal Tables gives

you the ability to create a table that automatically keeps track of your data in time. Magic was never meant to be part of IT, but SQL Server has done a great job with this new feature. We will cover how to set it up, how it works, querying the tables including the history table and last but not least, how you can incorporate this feature into existing tables. Join me in a time travelling adventure to find out how you can leverage Temporal Tables in your world.

Introduction to Performance Troubleshooting Using Wait Statistics

Level: 200-300

Paul S. Randal — **SQLskills**

One of the first things you should check when investigating performance issues are wait statistics - as these can often point you in the direction for further analysis. Unfortunately, many people misinterpret what SQL Server is telling them and jump to conclusions about how to solve the problem - what is often called 'knee-jerk performance tuning'. In this session, you will learn what waits are, how to analyze them, and potential solutions to common problem patterns.

Managing In-Memory OLTP – a DBA Field Guide

Level: 200

Justin Randall — **SentryOne**

In-Memory OLTP in SQL Server 2016 has been reborn. Many limitations within the previous versions have been removed, making it a viable option for a variety of workloads. In this session, we will highlight critical issues in implementing and managing SQL Server 2016 instances and databases containing In-Memory tables.

Monitoring SQL Server to Make Your Life Easier

Kathi Kellenberger — **Redgate**

Whether you are responsible for one database or a thousand databases on a hundred servers, knowing what to pay attention to is critical. If your server estate is growing, looking after them gets even more complicated. It's easy to spend your day putting out fires instead of doing work that adds value to the company, and monitoring can help you avoid those fires in the first place. Attend this session to learn how monitoring can make your life easier.

Mythbusters

Level: 200-300

Paul S. Randal — **SQLskills**

It's amazing how many myths and misconceptions have sprung up and persisted over the years about SQL Server – after 19 years helping people out on forums, newsgroups, and customer engagements, Paul's heard it all. Are temporary tables always a good idea? Does using SSDs mean no fragmentation issues? Should you really plan a backup strategy? Should you add more memory to your server? These are just a few of many, many myths that Paul will debunk in this fast-paced session on how SQL Server operates and should be managed and maintained.

Practical PowerShell for SQL Server

Level: 200

Ben Miller — **Independent Consultant**

This session will cover real world functions that are used for real interaction with SQL Server. There will be a few slides but mostly demos with actual scripts that interact with SQL Server for management and getting data in and out. I will also introduce some outside modules created to assist as well. Things like Reading/Changing the following: Permissions, DB Owner maintenance and database space management. We all could use a few standard things in the SQL Server world of ever changing roles and "I have to have it now" stuff, that Management Studio can get in the way of getting it done faster. Join me for a fun PowerShell hour and never try to reuse a click again.

Professor DMV: How to Use Dynamic Management Views to Diagnose SQL Server Performance Issues

Level: 200

Glenn Berry — **SQLskills**

Dynamic Management Views and functions allow you to easily see exactly what is happening inside your SQL Server instances and databases with a high level of detail. You can discover your top wait types, most CPU intensive stored procedures, find missing indexes, and identify unused indexes, to name just a few examples. This session presents, demonstrates and explains numerous DMV queries that you can quickly and easily use to detect and diagnose configuration and performance issues in your SQL Server instances and databases.

SMO: A Study of the Server Management Objects

Level: 200

Ben Miller — **Independent Consultant**

SMO, short for Shared Management Objects (or SQL Management Objects to some), are some powerful programming interfaces to get and manipulate SQL Server in code. These objects are used in custom programs, in scripting with PowerShell and can be used to fully manage a SQL Server. But what do you really do with them? How do you use them? This session will cover some core objects that are used in every day interaction with SQL Server. I will cover how to get access to them, how to use them and best of all you will get to know these mysterious objects intimately so that you can get some real work done easily. Join me for some de-mystification of these objects and never be afraid again. Come get your geek on.

SQL Server 2016/2017: AlwaysOn Availability Groups – Windows and Linux Deployments

Level: 300

David Pless — **Microsoft**

Introduced in SQL Server 2012, AlwaysOn Availability Groups is an enterprise-level high-availability and disaster-recovery solution. AlwaysOn Availability Groups maximizes the readiness of a set of user databases as an availability group that can fail over as a unit.

In this session, we will discuss the improvements available in SQL Server 2016 /2017 and how these improvements increase the viability to leverage AlwaysOn Availability groups as a High Availability / Disaster Recovery solution for reporting and OLTP workloads across Windows and Linux environments. Additionally, we will cover SQL Server 2016 specific capabilities such as improved log performance, multiple replica automatic-failover, failover based on database failure, readable secondaries for 'round robin' load-balancing, and basic AlwaysOn 'Availability Groups' for Standard edition.

Finally, in SQL Server 2017, there are two different architectures for availability groups. AlwaysOn availability groups can now provide high availability, disaster recovery, and read-scale balancing. In Windows, failover clustering provides the cluster manager while in Linux, you can use Pacemaker. The other new architecture is a cluster-less, read-scale availability group. We will discuss how a read scale availability group provides support for non-HADR, read-only workloads.

SQL Server 2017: Intelligence – Meet Database

Level: 200

Pedro Lopes — **Microsoft**

SQL Server 2017 introduces ground-breaking query performance and diagnostics enhancements to truly add intelligence to SQL Server. From Adaptive Query Processing to diagnostics enhancements or new tools, SQL Server will handle a number of common scenarios automatically, or give you better insights into common performance scenarios such as use of Parallelism. Come join us in the intelligent database world starting with SQL Server 2017.

SQL Server 2017: Enterprise Reporting, Power BI Report Server and Mobile

Level: 200

David Pless — **Microsoft**

SQL Server 2016/2017 is packed with new capabilities with SQL Server Reporting Services, Mobile Report Publisher, and the new Power BI Report Server. In this session, we will outline the new features and capabilities of SQL Server 2017 Reporting Services and Power BI Report Server that puts the power of data in the hands of everyone. We will cover the alignment of Microsoft's hybrid reporting solutions.

We will dive into paginated and interactive mobile reporting, KPIs, dashboards, and other new features in both SQL Server 2017 and Power BI Report Server. Additionally, we will focus on the capabilities of 'Mobile Report Publisher' and web based deployments which allows for greater consumption of your report capabilities across the enterprise. Finally, we will cover Power BI Premium and the ability to license at capacity, give dedicated performance to PBI workloads, and Power BI embedded capabilities.

SQL Server 2017: Query Store and Auto Tuning

Level: 300

David Pless — **Microsoft**

Query Store is a feature as of SQL Server 2016 / Azure SQL Database V12. Query Store is designed to help with query performance troubleshooting by making it easier to identify poorly performing statements, address parameter sniffing issues, and finding scenarios where performance generally regresses. In this session, we will cover how Query Store can help you identify changes in query plans and figure out when performance regressions occur.

If a query generates different plans, you can use Query Store to analyze the plan changes, identify performance degradation, and even force the query processor to use a particular plan for your query. These capabilities are enabled in the Query Store UI and in specific Query Store Dynamic Management Views.

Additionally, we will demo the new capabilities in SQL Server 2017 with Query Store reports, wait statistics analysis, and the execution plan information available in SQL Server Management Studio 17.x to help identify query plan issues quickly.

Finally, we will cover Automatic Detection and Tuning in SQL Server 2017 where you can be notified when a potential performance issue is detected by the Database Engine to automatically correct performance problems. Automatic Tuning in SQL Server 2017 enables you to identify and fix performance issues caused by SQL plan choice regressions.

Check the conference website for the latest information, DEVintersection.com

Sessions and speakers are subject to change.

SQL Server 2017 and Azure SQL DB: Security Smackdown

Level: 200

David Pless — **Microsoft**

In this session, we will cover and demo many security features in SQL Server 2016/2017 such as Row Level Security, Dynamic Data Masking, Always Encrypted, Advanced Threat Detection, and the Azure Security Center covering SQL Server 2016/2017 and Azure SQL Database.

Row-Level Security enables customers to control access to rows based on the characteristics of the user executing a query. RLS enables you to implement restrictions on data row access. For example, ensuring that workers can access only those data rows that are pertinent to their department, or restricting a customer's data access to only the data relevant to their company. Dynamic Data Masking limits (DDM) sensitive data exposure by masking it to non-privileged users. It can be used to greatly simplify the design and coding of security in your application. Always Encrypted is another feature designed to protect sensitive data stored in Azure SQL Database or SQL Server databases. Always Encrypted allows clients to encrypt sensitive data inside client applications and never reveal the encryption keys to the Database Engine (Azure SQL Database or SQL Server). These technologies can be used together to create a defense-in-depth strategy. We will cover these security features with an in-depth, demo focused delivery covering Azure SQL Database and SQL Server 2016/2017 on-prem.

We will also cover the Azure Security Center and Advanced Threat Detection which can be used to provide a dashboard for viewing and responding to security risks with a fully Power BI integrated solution. Azure SQL Database Threat Detection provides security by detecting activities which may indicate a threat such as SQL injection attacks. The benefits of Azure Threat Detection include configuration of SQL threat detection policy, email alerts upon detection, and Azure Portal and Microsoft Excel integration.

SQL Server Indexing: Strategies for Performance

Level: 200

Kimberly L. Tripp — **SQLskills**

SQL Server has clustered and nonclustered b-tree indexes, clustered and nonclustered columnstore indexes, and even a few other specialized types of indexes. It can be hard to know the correct direction to take for your data? Join Kimberly in this session to get an overview of when and why you should use combinations of these with emphasis on answering these main questions:

1. How does SQL Server version affect indexing choices / strategy?
2. What criteria should you look for in data access patterns and usage patterns?
3. What makes a good base table structure (clustered b-tree v. clustered columnstore)?
4. What can you do now? What are your plans for migration?

If you want to know the RIGHT way to index your tables – from DESIGN to TEST to PRODUCTION – this is the place to be!

SQL Server Indexing: Tools and Tuning Walkthrough

Level: 300

Kimberly L. Tripp — **SQLskills**

In the prior session, we looked at index types – rowstore v. columnstore as well as the requirements tied to SQL Server version; however, that session is all about concepts, choices, and strategies. That first session is about knowing the right direction

and some of the core / critical principles but this session is about how to move forward and tackle a specific query's performance problem. In this session, we'll look at query plans, statistics IO, showplan's index recommendation (the green hint), and the index tuning wizard. All of these tools can be both incredibly helpful but also misleading. Kimberly will cover how to use these tools effectively so that you know how to best tune your queries reducing both time and effort on your time but also with better results!

Statement Execution, Caching, and Reducing Plan Cache Bloat

Level: 200

Kimberly L. Tripp — **SQLskills**

How you execute your data requests can affect performance, caching, and reuse. Did you ever wonder where that estimate (in the showplan) comes from? Is it correct or, is it way off? Why? You've probably heard that many of your problems are related to statistics. Potentially, you've even rebuilt statistics only to find that it "fixes" the problem. However, what you might be seeing is a false positive. And, it doesn't always work. Come to this session to find out how you should be executing your statements for the best performance, caching, and reuse! We'll look at adhoc statements, dynamically constructed statements, and sp_executesql (e.g. forced statement caching). We will round out the session for how to best setup your server for better plan cache management so that your cache doesn't become bloated from adhoc executions!

Statistics: Understanding, Updating, and Improving Performance

Level: 300

Kimberly L. Tripp — **SQLskills**

In this follow-on session, (to Estimates & Statistics: Parameters, Literals, and Variables – Oh My!), Kimberly will define and demo when and how statistics are used as well as why it's so important to have accurate and up-to-date statistics. If you've been confused about histograms, when and how to update statistics, the inaccuracy of statistics on very large tables (and the limits of the histogram), then this is the place to be!

TempDB Configuration, Monitoring, and Troubleshooting for Performance

Level: 200

Justin Randall — **SentryOne**

TempDB is a critical shared resource on every SQL Server instance. In this session, DBAs and Developers will learn the role of TempDB in query processing and SQL Server maintenance tasks, and leave with a checklist of essential items covering configuration, monitoring, and performance troubleshooting.

Tuning for SELECT *

Level: 200

Brent Ozar — **Brent Ozar Unlimited**

You're tired of hearing that you're not supposed to SELECT * - you just have to do it because of your application. Learn when it isn't all that bad, and how you can tweak the queries and indexes to make it faster.

Why All SQL Developers Should Use Perfmon Counters

Level: 300

Tim Chapman — **Microsoft**

Performance Monitor is one of the most misunderstood tools for any SQL developer or administrator. Mastering this tool can unlock secrets that no other toolset can easily expose. In this session, we will look at not only how to effectively capture and measure perfmon counters, but we will also look at which counters are important for troubleshooting, when to use them, important combinations of counters, and how to use these counters to troubleshoot common SQL Server issues.

Writing Faster Queries

Level: 300

Tim Chapman — **Microsoft**

CPUs are running faster now than ever before, solid-state drives are replacing spinning disks, and database servers have terabytes of RAM. And yet we still suffer from poor database performance. Why? Because a poorly written query will bring even the best hardware to its knees. For truly great performing systems there is no substitute for properly written queries, good indexes, and a database design that takes advantage of all SQL Server has to offer. And for this we rely on the skills and expertise of DBAs and database developers. Join Microsoft SQL Server Certified Master, Tim Chapman to learn how to spot common query performance killers and how you can take advantage of features found in SQL Server 2014+ to make your queries as fast as possible.

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PRE-CONFERENCE Workshops
Saturday, March 24, 2018
9:00am - 4:00pm

Angular Fundamentals

Dan Wahlin — **Wahlin Consulting**
John Papa — **Microsoft**

Bring your laptop *FULLY CHARGED*, as you'll be writing Angular code using what you learn in several hands-on exercises.

Do you want to get a jumpstart on developing with Angular so you can build robust Web applications? Join us and learn how to work with data binding, create components, and communicate across components with input/output bindings. We'll show how to abstract logic into client-side services, provide services using the Angular injectors, and take advantage of dependency injection. When it's time to communicate with a server, we'll need to talk over HTTP. We'll learn how to send and receive data to and from a server using Http and use RxJS and observables.

You'll also learn how to get up and running quickly with the Angular CLI. Bring your laptop, as you'll be writing Angular code using what you learn in several hands-on exercises.

Bringing your .NET Investments to the Cloud

Brady Gaster — **Microsoft**

You've used .NET to build a world-class web app or Intranet that you want to modernize and bring to the cloud, but you don't know what steps to take to get there, or which approaches are best for your scenario. Come to this workshop to learn from Microsoft experts leading the industry in ASP.NET, Azure, Visual Studio and Visual Studio Code, and container technology like Docker and Kubernetes to learn how you can first bring your existing .NET Framework applications to Azure with minimal code changes or conversion. Then, we'll talk about how Azure services can be used to extend your existing implementation, provide better diagnostics capabilities, and enable your existing app with artificial intelligence or serverless technology. You'll also learn about the exciting advantages of using .NET Core for future advancements, and gain insight into how you can continue the journey in modernizing your applications without sacrificing your existing investments. Come to this workshop to use the tools and services and to get guidance directly from the product teams who build .NET and Azure.

Developing Microservices Solutions on Azure Day 1

Michele Leroux Bustamante — **Solliance, Inc.**

Microservices architecture is the current evolution of application and enterprise architecture that takes the principles we remember from service-oriented architecture applies them more discretely. When you apply microservices architecture patterns and principles you decompose monolithic applications into smaller, more manageable and atomic parts - creating full-stack service silos - leveraging advances in containerization and DevOps culture. This approach enables teams to respond to rapidly changing business requirements more efficiently. Embracing microservices architecture also forces you into better practices related to design and operations – by necessity – arguably as it should be.

This workshop begins with a short journey through the evolution of microservices principles and patterns with design discussions of real applications and visual topologies. Following this comes the fun of exploring developing microservices for Azure and taking advantage of Azure-specific features and platforms that support this type of solution. Topics covered will include containerization with Docker, Azure Web Apps, Azure Container Service, Azure Service Fabric, Event Hubs and Azure Functions. You'll learn how each of these can be leveraged in a microservice solution targeting Azure, how to deploy simple microservices solutions through to large scale enterprise solutions that combine many of these features to handle different requirements. You see how to go through the process of design, development, deployment, upgrade, scale and operational use cases. By the end of this workshop, you will have a taste of several types of microservices solutions and deployment topologies using Azure features – to inform how you might apply the same features in your own solutions.

Identity and Access Control for Modern Applications and APIs using ASP.NET Core 2.0 Day 1

Brock Allen — **Solliance, Inc.**

Workshop will have some hands-on aspects. Bring your own *FULLY CHARGED* laptop.

Modern application design has changed quite a bit in recent years. "Mobile-first" and "cloud-ready" are the types of applications you are expected to develop. Also, to keep pace with these demands, Microsoft has revamped their complete web stack with ASP.NET Core to meet these architectural demands.

Needless to say, you also have to secure these apps.

Multi-platform, multi-client, and highly-mobile users bring a new set of challenges, so the approaches of the past are no longer appropriate for modern applications. This is your chance to dive into all things security related to these new technologies. Learn how to securely connect native and browser-based applications to your back-ends and integrate them with enterprise identity management systems as well as social identity providers and services.

This workshop covers everything you need to know to build modern and secure web, native & mobile applications. The foundation will be Microsoft's latest technology stack, but will also include IdentityServer4, which is the officially recommended framework for building token services.

Intelligence and Machine Learning in Azure

Zoiner Tejada — **Solliance, Inc.**

Workshop will have some hands-on aspects. Bring your own *FULLY CHARGED* laptop.

Most materials about machine learning focus on the details around model building. While that is important, as a developer what is really important to you is that you understand both model creation and model operationalization. Succinctly, this workshop is really about the end game of delivering a successful solution in Azure- how you operationalize the model and integrate intelligence into your solution architecture.

For those unfamiliar with machine learning concepts, we will provide a background so you that you understand the key tools in the toolbox (data transformation, supervised learning modules, unsupervised learning modules) and the value that the new Azure Machine Learning brings to the larger solution (such as classification, clustering and predictive analytics). As a developer, you will leave with a good sense of how models are programmed using Python, as well as how they can be composed visually using the designer provided by Azure Machine Learning.

We will cover the pipeline of how you need to prepare your data

using the Azure Machine Learning Workbench, how you perform model training by building experiments within the Workbench, and how to architect your solution so that the model training can be done with data at scale (e.g., exceeding 10 GB and reaching Terabyte scale) in the situations that require it. We cover the gamut of model creation from local training on your dev box to remote training on a VM, on HDInsight and SQL ML Services. You will learn how models are trained in Azure Machine Learning via training experiments, as well as via programs that leverage the parallel algorithms in HDInsight with Spark and how you train a model without ever leaving your SQL database by using T-SQL to execute embedded R scripts against tabular data managed by SQL Server.

With your model in hand, we'll tackle an issue that surprises developers new to machine learning- how to leverage the trained model from their programs. Operationalizing your model is the critical last mile in getting value out of your effort. Here we'll cover the gamut of operationalization options from local prediction to remote prediction with Web Services and Stored Procedures. Not knowing your options for how to operationalize, or not having a plan for operationalizing and integrating into your application can mean significant delays in bringing the value of your model to your application because you will see wasted time in transcoding models to different productions languages (like converting from R to C#), questions about the parity of that converted model to the original, finding your solution for operationalization does not scale well or wasting money on approaches that are simply inefficient for hosting operationalized models.

After integrating our model into our solution, our journey continues. Here we will pause to reflect on and appreciate the build versus buy decision- in some cases we may not have to go through the trouble of building and operationalizing our own model at all because Microsoft Cognitive Services already provides what our solution needs, in a convenient REST API form.

With an end-to-end, intelligent solution in place we turn our attention to the subtle follow-on problems we need address, such as how we ensure our model is continuing to perform and how we re-train the model with new information over time to keep it current and accurate. Come to this workshop and leave equipped to develop intelligent solutions end-to-end using Microsoft Azure.

Introducing Domain-Driven Design with ASP.NET Core – Day 1

Steve Smith **Ardalis**

Workshop will have some hands-on aspects. Bring your own *FULLY CHARGED* laptop.

Writing SOLID, testable ASP.NET Core applications has never been easier, but it may require a change in the way you typically structure your projects and their dependencies. In this hands-on workshop, you'll build a working ASP.NET Core application, complete with unit and integration tests. Along the way you'll learn the basics of Domain-Driven Development, and how to apply them to ASP.NET Core application development. The principles and patterns will apply to developers working with previous versions of ASP.NET MVC, as well.

Migrating to SQL Server 2017

Level: 200-300

Glenn Berry **SQLskills**

How do you design and implement a safe and successful migration from an older version of SQL Server to SQL Server 2017 with no data loss and virtually no downtime? What if you have a limited hardware budget for the upgrade effort and you are worried about the core-based licensing in SQL Server 2017? How can you choose your hardware wisely in light of the new licensing model? How can you convince your organization that the time is right to upgrade to SQL Server 2017?

This session will cover several different methods for migrating your data to SQL Server 2017 while meeting these objectives and minimizing your hardware and licensing costs. You will also learn how to help make the case that a complete data platform upgrade makes excellent sense from a business perspective. You will also learn how to do effective capacity planning for the new environment to ensure that you have the best performance possible with a manageable SQL Server 2017 licensing cost.

SQL Server Indexing Strategies for Performance

Level: 200-400

Kimberly L. Tripp **SQLskills**

There are many index types and strategies in SQL Server and you've probably wondered: why isn't SQL Server using the indexes I've created? What index options exist? What strategies are best? Should I use indexes to "cover a query"? What's the best way to find the right balance between too many and too few indexes? Help!

In this full-day and fast-paced workshop, Kimberly will give you insight into index structures, how covering works and when it's an appropriate option to consider. We'll compare and contrast row-based index options (clustered, nonclustered, and indexed views) as well as the scenarios where columnstore should be considered/used. In terms of versions, this session applies to all versions from 2008 and higher (except columnstore which has different capabilities in 2012, 2014, and 2016). However, we'll focus primarily on SQL Server 2016+ in terms or performance improvements and demos. Above all, we'll strategize your best performance and indexing best practices on your workload characteristics.

Our primary focus will be around OLTP and hybrid databases (modifications combined with some queries/reporting) but NOT data warehousing (which is most appropriate for columnstore and indexed views). However, you'll still have a good idea on how to best index in those environments too. Our primary feature focus will be: row-based indexes (clustered and nonclustered); INCLUDE (added in SQL Server 2005); filtered indexes (added in SQL Server 2008) and best overall strategies for performance.

After this intense full-day workshop, you'll understand the different indexing strategies to improve performance; the pros and cons of covering; and why "indexing for performance" is both a science and an art!

The TSQL Programming Workshop

Level: 100-300

Tim Chapman **Microsoft**

SQL Server's version of the Structured Query Language, TSQL, is the cornerstone upon which all SQL Server database development is built. Whether you are new to TSQL database programming or wanting to brush-up on some of the new TSQL features – this class has something for you. We will cover the basics of TSQL for report writing and data modification as well as advanced constructs such as aggregations, windowing functions, and stored procedure development. As these features are covered, performance tuning will be covered so that once the class is complete you'll have a better understanding of not only how to write TSQL – but to write GREAT TSQL so that your applications really scale.

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PRE-CONFERENCE Workshops
Sunday, March 25, 2018
9:00am - 4:00pm

Build an Air Traffic Control Simulator Using Azure IoT

Daniel Egan, Jeremy Foster **Microsoft**

Workshop will have some hands-on aspects. Bring your own *FULLY CHARGED* laptop. All hardware provided. **Attendees please bring a Mac or PC laptop.** Visit https://aka.ms/flysim if you're the type who likes to work ahead.

Don't get too far behind in this IoT revolution! In this workshop, attendees will be stepped entirely through the creation of a fun and approachable air traffic control simulator using real IoT devices and the very best features Microsoft Azure IoT has to offer, and in the process learn valuable concepts on the device side as well as in the cloud. Developers new to IoT are welcome, but intermediate IoT developers will be challenged as well. You may enter this workshop as an IoT noob, but you'll leave as an expert.

You'll learn things like…

- Overall IoT application architecture
- Setting up an IoT Hub in Azure
- Deploying IoT code to a device
- Sending messages between device and cloud
- Using Azure Functions to process data
- Using Stream Analytics to perform real-time proximity detection

Angular Essentials

Dan Wahlin **Wahlin Consulting**
John Papa **Microsoft**

Bring your laptop *FULLY CHARGED*, as you'll be writing Angular code using what you learn in several hands-on exercises.

Do you want to take your Angular skills up a level and learn how to organize your app, debug it, and learn optimization tips? Join us and we'll show how the Angular CLI establishes routing when we create the app. Then we'll move into more in-depth routing features including child routes, parameters and the role of RxJS in routing. We'll work with eager and lazily loaded routes, create bundles with code-splitting, and create routing guards to help manage route navigation rules. We'll also create Node.js and ASP.NET servers to host our data, and communicate with them via HTTP. Join us to learn how to create both template driven and reactive forms, and learn when each may be helpful. Finally, when it is time to deploy our app we'll need to know how to optimize it. We'll build our apps with the Angular CLI, optimize our applications, and deploy to the cloud.

Azure for the SQL Server DBA

Level: 100-300

Tim Radney **SQLskills**

Microsoft Azure is an open, flexible, scalable, enterprise-grade cloud computing platform. This full day class will teach you why migrating to SQL Server running in Azure is secure, reliable, and easy, as well as how to do it.

The Azure platform is vast with many services to choose from. You will get a high-level overview of the various services with a focus on SQL Server running in Azure Infrastructure as a Service (IaaS) and Azure SQL Database as a Platform as a Service (PaaS).

You will see how easy it is to build a virtual machine in Azure running SQL Server and how to migrate your data. You will gain insight into licensing, security, pricing, and networking for connecting to the IaaS platform. You will quickly see how beneficial Azure VMs are with the ability to scale workloads, integrate Active Directory, leverage built-in HA/DR options and manage your environment. You will also learn why many companies are leveraging Azure VMs for disaster recovery.

As far as PaaS is concerned, you will learn about the features that Azure SQL Database offer, as well as the similarities and differences between it and on-premises SQL Server. You will learn various ways to check the compatibility of your on-premises databases as well as migration methods when we run a compatibility check and migrate it to Azure. You will gain a deep understanding of how to use and manage Azure SQL Databases.

If you are in need of building out a DR location for your organization, looking for an IaaS platform that is secure, easily scalable, and affordable, or are wanting to learn the benefits of Azure SQL Database, then this workshop is for you.

Build Your Own Application with ASP.NET Core Workshop

Jeff Fritz, Jasmine Greenaway **Microsoft**

Workshop will have some hands-on aspects. Bring your own *FULLY CHARGED* laptop.

You will learn about .NET Core and ASP.NET Core directly from the team that built it in this high-powered workshop. .NET Core is the new open source, cross platform version of .NET that is available on GitHub. ASP.NET Core is a lean and composable framework for building web and cloud applications. Throughout the workshop you will learn how to build an application with .NET Standard, Entity Framework, Razor Pages, and how to use some of the best practices in ASP.NET Core development.

Developing Microservices Solutions on Azure Day 2

Day 2 builds upon the first day.

Michele Leroux Bustamante **Solliance, Inc.**

Microservices architecture is the current evolution of application and enterprise architecture that takes the principles we remember from service-oriented architecture applies them more discretely. When you apply microservices architecture patterns and principles you decompose monolithic applications into smaller, more manageable and atomic parts - creating full-stack service silos - leveraging advances in containerization and DevOps culture. This approach enables teams to respond to rapidly changing business requirements more efficiently. Embracing microservices architecture also forces you into better practices related to design and operations – by necessity – arguably as it should be.

This workshop begins with a short journey through the evolution of microservices principles and patterns with design discussions of real applications and visual topologies. Following this comes the fun of exploring developing microservices for Azure and taking advantage of Azure-specific features and platforms that support this type of solution. Topics covered will include containerization with Docker, Azure Web Apps, Azure Container Service, Azure Service Fabric, Event Hubs and Azure Functions. You'll learn how each of these can be leveraged in a microservice solution targeting Azure, how to deploy simple microservices solutions through to large scale enterprise solutions that combine many of these features to handle different requirements. You see how to go through the process of design, development, deployment, upgrade, scale and operational use cases. By the end of this workshop you will have a taste of several types of microservices solutions and deployment topologies using Azure features – to inform how you might apply the same features in your own solutions.

Identity and Access Control for Modern Applications and APIs using ASP.NET Core 2.0 Day 2

Day 2 builds upon Day 1

Brock Allen — **Solliance, Inc.**

Workshop will have some hands-on aspects. Bring your own *FULLY CHARGED* laptop.

Modern application design has changed quite a bit in recent years. "Mobile-first" and "cloud-ready" are the types of applications you are expected to develop. Also, to keep pace with these demands, Microsoft has revamped their complete web stack with ASP.NET Core to meet these architectural demands.

Needless to say, you also have to secure these apps.

Multi-platform, multi-client, and highly-mobile users bring a new set of challenges, so the approaches of the past are no longer appropriate for modern applications. This is your chance to dive into all things security related to these new technologies. Learn how to securely connect native and browser-based applications to your back-ends and integrate them with enterprise identity management systems as well as social identity providers and services.

This workshop covers everything you need to know to build modern and secure web, native & mobile applications. The foundation will be Microsoft's latest technology stack, but will also include IdentityServer4, which is the officially recommended framework for building token services.

Introducing Domain-Driven Design with ASP.NET Core – Day 2

Day 2 builds upon Day 1

Steve Smith — **Ardalis**

Workshop will have some hands-on aspects. Bring your own *FULLY CHARGED* laptop.

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Performance Troubleshooting using Waits and Latches

Level: 300-400

Paul S. Randal

One of the first things you should check when investigating performance issues are wait and latch statistics, as these can often point you in the right direction for further analysis. Unfortunately, many people misinterpret what SQL Server is telling them and jump to conclusions about how to solve the problem - what is often called 'knee-jerk performance tuning'. In this full-day workshop, you'll learn how to investigate and interpret wait and latch statistics - practical techniques you can take home and start using immediately. You'll also learn what a myriad of wait and latch types actually mean and how you can investigate lightly-documented types to gain insight into what causes them. Don't waste time when it comes to performance troubleshooting; wait statistics are the fastest route to understanding your problems and this workshop will help you get there faster.

PowerShell Essentials for the DBA

Level: 200

Ben Miller — **Independent Consultant**

Ever wonder what the buzz is about using SQL Server and PowerShell together? If you have wondered, you are not alone. This full-day workshop will bring you the essentials in using PowerShell in your daily life as a DBA. We will go into the quick setup of the PowerShell environment to maximize productivity. Then, we will dive into the minimum PowerShell syntax needed to run commands, and then we will go over the modules out there that make your life so much better. From the SQLServer module from Microsoft to the DBATools module from the SQL Server Community, you will be productive very quickly! After this workshop, you will be able to take the scripts presented and immediately make a difference when returning to the office. Join me in learning this critical skill of high productivity using PowerShell. All of this on your journey to becoming a PowerShell DBA.

Zen of Architecture

Juval Lowy — **IDesign, Inc.**

For the beginner architect, there are many options for doing pretty much anything. But for the Master architect, there are only a few. In this dense workshop Juval Lowy will explain his approach to system analysis and design, using volatility to decompose a system into its comprising services. Juval will contrast it with the most common mistake done in architecture, using functionality to identify services. These are universal design principles, and Juval will use examples from software and non-software systems alike. You will also see how to overcome the real hurdles architects face pursuing volatility-based decomposing, simple and practical techniques for identifying areas of volatility, common telltale signs or "smells" when your design is still functional when using the Method, IDesign's approach for system architecture. You will learn how to literally mechanize software system design, how to do it quickly and effectively. Juval will also discuss logical tiers, security, interoperability, scalability, transactions, and other aspects of a modern application. The workshop concludes with discussion of how modern architecture fits into development processes such as Agile and how to design the development process for maximum productivity.

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POST-CONFERENCE Workshops
Thursday, March 29, 2018
9:00am - 4:00pm

Conquering Mobile with JavaScript: PWAs and NativeScript

Todd Anglin

Workshop will have some hands-on aspects. Bring your own *FULLY CHARGED* laptop.

Are you looking for a comprehensive mobile development strategy that can help you deliver "the right" mobile app for every project? Look no further. In this workshop, we'll explore a complete workflow for building mobile apps with JavaScript (and TypeScript) that can be applied to any mobile project. From achieving maximum reach with Progressive Web Apps, to delivering maximum richness with native apps powered by JavaScript (via NativeScript), the techniques in this workshop will give you the tools you need to make sure your mobile app projects don't fail.

Topics we'll cover:

- Intro to Progressive Web Apps (Service Workers, Web App Manifest, etc)
- Intro to NativeScript – native apps with JavaScript
- Pros and Cons of PWA vs Native
- Building your first PWA
- Building your first NativeScript app
- Sharing code between PWAs and NativeScript
- Debugging and deployment
- Web and native push notifications

If you need to build mobile apps in 2018, and you have a background in web development, this workshop is for you. Whether you're looking to get up-to-speed on PWAs or discover how web skills can be used to create native mobile apps, you're guaranteed to learn new techniques that can be immediately applied to your next mobile project. Bring a laptop and be ready for some fast paced, hands-on learning.

Developing Modern Cloud Applications in Azure

Andrew Hall, Scott Hunter and Paul Yuknewicz — **Microsoft**

Workshop will have some hands-on aspects. Bring your own *FULLY CHARGED* laptop.

You've heard about the benefits of developing cloud applications for Azure. Now you'll get your hands dirty and experience these for yourself: developing, deploying, scaling, and debugging. Come join the Microsoft experts who built ASP.NET, Azure and Visual Studio and let's build some scalable cloud apps. We'll step through you a fast path to get existing apps up on Azure. We'll also show you how to build modern scalable cloud app patterns for Web App and worker microservices using Docker. We give you our tips on how to be incredibly productive building and debugging your app using Visual Studio, and we'll share our experiences together.

I Will Make You a Better C# Developer – 2018 Edition

Kathleen Dollard — **Microsoft**

You're an intermediate to advanced C# programmer excited about attending a conference filled with cutting edge talks from amazing speakers. It's important to stay up to date, but you keep thinking of your existing code assets and how much time you spend on that code. Sometimes you feel that by the time you finish a new application, the code is already out of date.

This workshop builds your capacity as a keeper of code - caring for and evolving existing code assets. First, you'll take a step back to learn how to assess your assets and whether it will be easy or hard to evolve them. You'll consider long-range planning to maintain the value of your code assets – especially where to apply gradual change to reduce disruption and minimize risk. A step-wise process offers benefit at every point along the way.

You need to keep code safe, and that means tests to ensure your code continues to work as expected. You'll gain insight and learn techniques for creating tests for existing code assets and improving the effectiveness and the ease of maintaining your tests.

You need to keep code predictable. You'll learn the most common pitfalls in .NET types that can affect accuracy and performance.

You need to keep code understandable. That means shrinking it, organizing it and clarifying intent. You'll learn techniques to minimize boring redundant code so that special case, interesting and error prone code stands out. Those techniques will include generic hierarchies and higher-order functions. You'll also get better at refactoring and isolating technology dependent code.

You need to prepare code for the future. The .NET Standard is the declaration of a set of APIs that current and future frameworks will implement, and you'll learn to evaluate your code's compatibility with .NET Standard. This compatibility also lets you move parts of your app to other platforms and operating systems. Your code will be ready for Xamarin, UWP, and .NET Core and to run on Windows, Linux and MacOS.

You'll see an application evolve from a mess to a well-structured application ready to support additional platforms. Moving your application isn't just about code, so you'll also get tips for inspiring your coworkers and building management buy in. During this workshop, you'll learn a lot about code and you'll also understand how to apply these ideas to the ongoing evolution of your most important code assets. You'll leave ready to take the right sized steps for each set of code assets.

Mastering Query Tuning for SQL Server

Level: 200-400

Brent Ozar

You're comfortable writing queries, and you certainly have enough of 'em laying around the shop. You've got a mature application with thousands of queries, and you have no idea which ones to attack first. How can you make the biggest difference in the smallest amount of time?

In one day, you'll see how to measure the most resource-intensive queries on your server, recognize which ones will be the fastest to fix, and then rewrite them to remove common anti-patterns. You'll learn about measuring the plan cache, reading & tuning query plans, identifying & fixing parameter sniffing, reducing cardinality estimation errors, and proving that your changes actually made the query go faster.

All of these techniques will work on all supported versions of SQL Server: 2008 through current. We'll talk about a few things that 2014 & newer have brought to the table, but even then, I'll show you workarounds to get better performance.

This session will be very focused: I'll be working through query tuning demos, tuning one query after another. You'll get the most out of this session if you've been writing queries for at least 2 years. We won't be covering indexes, wait stats, hardware, or the cloud: this session is exclusively focused on making queries go faster by changing them to get better query plans.

Node.js in the Enterprise

Dan Wahlin — **Wahlin Consulting**

John Papa — **Microsoft**

Bring your laptop *FULLY CHARGED*, as you'll be writing Node.js code using what you learn in several hands-on exercises.

Want to learn how to use Node.js in your enterprise application? Join us and dive right into getting started with Node.js using Node modules, modern JavaScript, and NPM packages. We'll explore how Node.js works with its event loop, good practices to follow, and how to analyze and debug your Node.js apps. We'll build a web server, add middleware, and, explore what various powerful techniques for creating robust Node.js applications that serve static HTML. Next, we'll explore how to extend Node.js to serve data over HTTP for our web APIs. We'll tackle how to structure our routes and secure our services using Passport.js. It is important to establish good logging practices, so we'll show how you can create a logging strategy.

SQL Server 2016 / 2017 and Power BI Reporting Solutions

Level: 300-400

David Pless — **Microsoft**

Join Microsoft Technical Specialist David Pless as we explore the capabilities of Power BI desktop, hybrid reporting, and the new capabilities of Power BI Premium and Report Server. In today's ever maturing world of enterprise reporting, self-service business intelligence, and data science we must be ready to quickly analyze and visualize data anywhere. With Power BI, self-service capabilities has expanded to all data-workers beyond enterprise reporting to mobile platforms, embedded application solutions, as well as advanced analytics.

With Power BI Premium and Report Server, we now have a scalable solution where dedicated hardware powers scheduled cloud-based reporting and where Power BI Report Server brings self-service cloud capabilities on-prem.

In this workshop, we will focus on these capabilities along with SQL Server Reporting Services and Mobile Report Publisher. We will cover improvements to paginated reporting, interactive and mobile reporting, KPIs, dashboards, and other new features in SQL Server 2016 / 2017. We will demo dashboard brand control, Microsoft Office integration, performance analysis and best practices, monitoring reporting performance, and High Availability and scale-out for reporting architectures. We will also cover application scenarios with Power BI embedded, Power BI Apps, and scenarios with Advanced Analytics including Twitter analysis, IoT, and Narrative Science.

Key areas include SSRS and Power BI Report Server features, Power BI reports and dashboards, report scheduling and deployment, custom visuals, and application use cases.

A sampling of sponsors and exhibitors:

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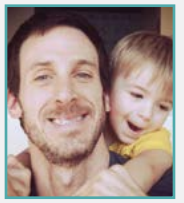
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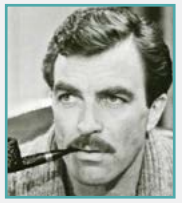
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Evening events Tuesday, March 27, 2018 7:00pm

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SQL after Dark

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