

# GREATER WISCONSIN SOFTWARE SYMPOSIUM

MAY 17 - 18, 2024 - MADISON, WI

## 2024 NO FLUFF JUST STUFF TOUR

World-Class Training for Software Developers and Architects

Software Architecture · Generative AI · Modern Java · Cloud · Microservices · Kubernetes · Kotlin · JavaScript · Machine Learning · Functional Programming · Web App Security · Spring 6 · Testing

### Why Attend the NFJS Tour?

No Fluff Just Stuff is focused on delivering an educational experience, free from vendor bias. NFJS features the best speakers in the industry with knowledge and passion for teaching. Our iterative content is updated not only year-to-year but, week-to-week!

#### Leverage Generative AI

The future is now! Developers must harness the power of generative AI to become more productive and efficient. This frees up valuable time to focus on creative problem-solving and core functionalities, ultimately leading to faster development and higher quality.

#### In-Depth 90-Minute Sessions

Our longer session format, workshops, and multi-part sessions allow speakers to go in-depth and teach the detailed concepts you need to know.

#### Agile Practices

Our speakers emphasize and present on topics such as: Test Driven Development, Continuous Integration, Code Quality Measurements, Code Smells, Team Building, and Customer Collaboration.

#### Learn from the Best

Our speakers are not vendor representatives. They are industry recognized experts. They are published authors, consultants, executives, and open source leaders.

#### Understand Web Security

The web is an increasingly hostile environment for web applications. The NFJS Tour includes security focused sessions and workshops so you will understand best security practices.

#### Cloud Architectures

The NFJS Tour explores different cloud computing architectures and how you can take advantage of them.

<https://nofluffjuststuff.com>

# Greater Wisconsin Software Symposium

## -Session Schedule-

(event schedule as of May 17, 2024)

### Friday, May. 17

7:30 - 8:30 AM : REGISTRATION/BREAKFAST: STATE STREET BALLROOM

8:30 - 8:45 AM : WELCOME

8:45 - 10:15 AM - Sessions

#### **Session #1 @ BADGER STATE : Modern Java 21+: The Next-Level Upgrade by Kenneth Kousen**

With much of the industry finally migrating to Java 11, 17, or 21, it's time to learn about many of the newer features you can use in your code. None of the changes since Java 8 have been as dramatic as the move to functional programming, but collectively the latest capabilities can really streamline the way you work. This talk summarizes several of them, like records and record patterns, sealed classes and interfaces, switch expressions, the HTTP client API, pattern matching for switch, and more, using them together in an app to see how they interact and improve your Java coding experience.

#### **Session #2 @ MILITARY RIDGE : Personal Knowledge Management - Second Brain Methods and Madness by Michael Carducci**

We are knowledge workers and ultimately, we must own our growth and learning. [Personal Knowledge Management]([https://en.wikipedia.org/wiki/Personal\\_knowledge\\_management](https://en.wikipedia.org/wiki/Personal_knowledge_management)) is a process of collecting information that one uses to gather, classify, store, search, retrieve and share knowledge in their daily activities and the way in which these processes support work activities. Despite taking notes, bookmarking web content, and highlighting passages in books; often we struggle to recall or rediscover these many insights we pick up daily in our work and life. This session introduces a tool and some process recommendations to never again lose discoveries and knowledge resources.

#### **Session #3 @ STARKWEATHER CREEK : What's New in Spring 6 and Spring Boot 3 by Craig Walls**

In this example-driven session, we'll review several tips and tricks to make the most out of your Spring development experience. You'll see how to apply the best features of Spring and Spring Boot, including the latest and greatest features of Spring Framework 6 and Spring Boot 3.

#### **Session #4 @ TOWER HILL : Kafka Fundamentals by Daniel Hinojosa**

Kafka is a "must know." It is the data backplane of the modern microservice architecture. It's now being used as the first persistence layer of microservices and for most data aggregation jobs. As such, Kafka has become an essential product in the microservice and big data world.

10:15 - 10:45 AM : BREAK: STATE STREET BALLROOM FOYER

10:45 - 12:15 PM - Sessions

#### **Session #5 @ BADGER STATE : Calling AI Tools from Java by Kenneth Kousen**

As far as Java is concerned, most AI tools are just another RESTful web service. In this session, learn how to use modern Java features like records, text blocks, the HTTP Client API and more to access ChatGPT, the Whisper audio-to-text transcription API, and image generators like DALL-E, Stable Diffusion, and Midjourney.

#### **Session #6 @ MILITARY RIDGE : Diffusion of Innovation by Michael Carducci**

Statistically speaking, you are most probably an innovator. Innovators actively seek out new ideas, technologies, and mental models by reading books, interacting with a broader social circle, and attending conferences. While you may leave this conference with the seed of an idea that has the potential to transform your teams, products, and organization; the battle has only begun. While, as a potential change-agent, you are ideally positioned to conceive of the powerful new ideas, you may be powerless to drive the change that leads to adoption. Your success requires the innovation to "diffuse."

#### **Session #7 @ STARKWEATHER CREEK : What's New in Spring 6 and Spring Boot 3 (continued) by Craig Walls**

In this example-driven session, we'll review several tips and tricks to make the most out of your Spring development experience. You'll see how to apply the best features of Spring and Spring Boot, including the latest and greatest features of Spring Framework 6 and Spring Boot 3.

#### **Session #8 @ TOWER HILL : Kafka Fundamentals (continued) by Daniel Hinojosa**

Kafka is a "must know." It is the data backplane of the modern microservice architecture. It's now being used as the first persistence layer of microservices and for most data aggregation jobs. As such, Kafka has become an essential product in the microservice and big data world.

12:15 - 1:15 PM : LUNCH: STATE STREET BALLROOM

1:15 - 2:45 PM - Sessions

# Greater Wisconsin Software Symposium

## -Session Schedule-

(event schedule as of May 17, 2024)

### **Session #9 @ BADGER STATE : LangChain4J: An AI Framework for Java by Kenneth Kousen**

LangChain is a popular AI framework in the Python world, but recently it has been ported to Java as part of the LangChain4J project. It brings useful abstractions to the process of adding AI capabilities to your Java-based systems, like prompt templates, structured outputs, message chains, and embedding services which allow you to add your own data to LLMs.

### **Session #10 @ MILITARY RIDGE : Tailor-Made Software Architecture by Michael Carducci**

Architecture is often described as “the stuff that’s hard to change” or “the important stuff (whatever that is)”. At its core, architecture defines the very essence of software, transcending mere features and functions to encompass vital capabilities such as scalability, evolvability, elasticity, and reliability. But here’s the real question: where do these critical capabilities truly originate? In this session, we’ll embark on a journey to uncover the secrets behind successful architectures. While popular architecture patterns may offer a starting point, it’s time to unveil the startling truth; both monolith and microservices-based projects continue to stumble and falter at alarming rates. The key to unparalleled success lies in the art of fine-tuning and tailor-making architectures to precisely fit the unique needs of your organization, environment, and the teams delivering the software.

### **Session #11 @ STARKWEATHER CREEK : Spring Graph QL by Craig Walls**

In this example-driven session, we’re going to look at how to implement GraphQL in Spring. You’ll learn how Spring for GraphQL builds upon GraphQL Java, recognize the use-cases that are best suited for GraphQL, and how to build a GraphQL API in Spring.

### **Session #12 @ TOWER HILL : Machine Learning Data Pipelines by Daniel Hinojosa**

How do we move information realtime and connect machine learning models to make decisions on our business data? This presentation goes through machine learning and Kafka tools that would help achieve that goal.

2:45 - 3:00 PM : BREAK: STATE STREET BALLROOM FOYER

3:00 - 4:30 PM - Sessions

### **Session #13 @ BADGER STATE : Practical AI Tools for Java Developers by Kenneth Kousen**

This talk will be tailored to Java developers as we delve into the practical applications of AI tools to ease your software development tasks. We’ll explore the capabilities of GitHub Copilot used as a plugin for IntelliJ IDEA and VSCode. We’ll also play with GPT-4 and examine ways it can help.

### **Session #14 @ MILITARY RIDGE : An Architect’s Approach to API Strategies by Michael Carducci**

Integration, once a luxury, is now a necessity. Doing this well, however, continues to be elusive. Early attempts to build better distributed systems such as DCOM, CORBA, and SOAP were widely regarded as failures. Today the focus is on REST, RPC, and graphql style APIs. Which is best? The go-to answer for architects is, of course, “it depends.”

### **Session #15 @ STARKWEATHER CREEK : Introducing Spring Modulith by Craig Walls**

Introducing Spring Modulith Although microservices are still a useful architectural choice, the balance of additional complexity and the advantages of microservice architecture do not necessarily work out in the benefit of all applications. While most application will benefit from improved modularity, the challenges that come with distributed computing may be too much for some applications to take on. A well-structured and modular monolithic application might be a better fit.

### **Session #16 @ TOWER HILL : Kubernetes Immersion by Daniel Hinojosa**

This is an introductory workshop to get started with Kubernetes. This assumes that you, the attendee, are fresh to this technology. This workshop begins with defining terms, deploying Kubernetes objects, tracking the health of your deployments, and exposing your application to the outside world. Our end goal is to have you deploy a full application on the internet.

4:30 - 4:45 PM : BREAK: STATE STREET BALLROOM FOYER

4:45 - 6:15 PM - Sessions

### **Session #17 @ BADGER STATE : Practical AI Tools for Java Developers (continued) by Kenneth Kousen**

This talk will be tailored to Java developers as we delve into the practical applications of AI tools to ease your software development tasks. We’ll explore the capabilities of GitHub Copilot used as a plugin for IntelliJ IDEA and VSCode. We’ll also play with GPT-4 and examine ways it can help.

### **Session #18 @ MILITARY RIDGE : Agile Architecture by Michael Carducci**

Agile has become an overused and overloaded buzzword, let’s go back to first principles. Agile is the 12 principles. Agile is founded on fast feedback and embraces change. Agile is about making the right decisions at the right time while constantly learning and growing. Architecture, on the other hand, seems to be the opposite. Once famously described by Grady Booch as “the

# Greater Wisconsin Software Symposium

## -Session Schedule-

(event schedule as of May 17, 2024)

stuff that's hard to change" there is overwhelming pressure to get architecture "right" early on as the ultimate necessary rework will be costly at best, and fatal at worst. But too much complexity, too early, can be just as costly or fatal. A truly practical approach to agile architecture is long overdue.

### **Session #19 @ STARKWEATHER CREEK : Intelligent Spring: Applying Generative AI in Your Spring Applications by Craig Walls**

By now, you've no doubt noticed that Generative AI is making waves across many industries. In between all of the hype and doubt, there are several use cases for Generative AI in many software projects. Whether it be as simple as building a live chat to help your users or using AI to analyze data and provide recommendations, Generative AI is becoming a key piece of software architecture. So how can you implement Generative AI in your projects? Let me introduce you to Spring AI. For over two decades, the Spring Framework and its immense portfolio of projects has been making complex problems easy for Java developers. And now with the new Spring AI project, adding Generative AI to your Spring Boot projects couldn't be easier! Spring AI brings an AI client and templated prompting that handles all of the ceremony necessary to communicate with common AI APIs (such as OpenAI and Azure OpenAI). And with Spring Boot auto-configuration, you'll be able to get straight to the point of asking questions and getting answers your application needs.

### **Session #20 @ TOWER HILL : Kubernetes Immersion (continued) by Daniel Hinojosa**

This is an introductory workshop to get started with Kubernetes. This assumes that you, the attendee, are fresh to this technology. This workshop begins with defining terms, deploying Kubernetes objects, tracking the health of your deployments, and exposing your application to the outside world. Our end goal is to have you deploy a full application on the internet.

6:15 - 7:00 PM : DINNER: STATE STREET BALLROOM

7:00 - 8:00 PM : Keynote: Engineering Reality: Lessons from Life, Architecture, and Artifice - Michael Carducci

## **Saturday, May. 18**

7:30 - 8:15 AM : BREAKFAST: STATE STREET BALLROOM

8:15 - 9:45 AM - Sessions

### **Session #21 @ BADGER STATE : Upgrade To Modern Java by Kenneth Kousen**

Over the past few years, the basic idioms and recommended programming styles for Java development have changed. Functional features are now favored, using streams, lambda expressions, and method references. The new six-month release schedule provides the language with new features, like modules and local variable type inference, much more frequently. Even the new license changes in the language seem to complicate installation, usage, and especially deployment.

### **Session #22 @ MILITARY RIDGE : Third Way Web Development with HTMX by Michael Carducci**

When the world wide web launched in 1993, it presented a revolutionary new way to globally share information. The revolution didn't stop there. The web soon became a platform for building, hosting, and distributing entire applications. Today most applications are built as web applications yet the core capabilities of HTML remain mired in the Web 1.0 days. Ajax was the first of many "hacks" to build web applications that delivered the rich, responsive user experience that rivaled traditional fat-client applications. Early js libraries and frameworks overcame browser incompatibilities and provided the first abstractions to hide the hacks and today's frameworks are so powerful that conventional wisdom states they are the de-facto best practice for building modern web applications. But at what cost? We've gone full-circle. Today's SPAs have more in common with the fat client applications of the 90s (albeit with simplified deployment) than they do with the web. The modern UX of today's framework-driven SPAs is what users demand, thus we follow the ever-changing trends; but at what cost? Beyond the bloat, complexity, and ephemerality of the modern webdev toolchain; modern webdev practices have inadvertently abandoned the core ideas of the web that made the platform technologically, architecturally, and philosophically revolutionary. Leading thinkers in the web development space have long proclaimed that "not everything should be a SPA" however the alternative of a web 1.0 vanilla html application has very limited utility in the year 2024. Are these our only options, or does a "third way" exist?

### **Session #23 @ STARKWEATHER CREEK : Revolutionizing Design: ChatGPT's Role in Next-Generation Software Architecture by Rohit Bhardwaj**

With advanced AI tools, software architects can enhance their project design, compliance adherence, and overall workflow efficiency. Join Rohit Bhardwaj, an expert in generative AI, for a session that delves into the integration of ChatGPT, a cutting-edge generative AI model, into the realm of software architecture. The session aims to provide attendees with hands-on experience in prompt engineering for architectural tasks and optimizing requirement analysis using ChatGPT. It is a compelling talk explicitly designed for software architects who are interested in leveraging generative AI to improve their work.

### **Session #24 @ TOWER HILL : From DDD to Delivery by Daniel Hinojosa**

Domain Driven Design has been guiding large development projects since 2003, when the seminal book by Eric Evans came out. Domain Driven Design is split up into two parts: Strategic and Tactical. One of the issues is that the Strategic part becomes so involved

# Greater Wisconsin Software Symposium

## -Session Schedule-

(event schedule as of May 17, 2024)

and intense that we lose focus on implementing these sorts of things. This presentation swaps this focus as topic pairs. For example, when we create a bounded context, is that a microservice or part of the subdomain? When we create a domain event, what does that eventually become? How do other tactical patterns fit into what we decide in the strategic phase?

9:45 - 10:00 AM : BREAK: STATE STREET BALLROOM FOYER

10:00 - 11:30 AM - Sessions

### **Session #25 @ BADGER STATE : Upgrade To Modern Java (continued) by Kenneth Kousen**

Over the past few years, the basic idioms and recommended programming styles for Java development have changed. Functional features are now favored, using streams, lambda expressions, and method references. The new six-month release schedule provides the language with new features, like modules and local variable type inference, much more frequently. Even the new license changes in the language seem to complicate installation, usage, and especially deployment.

### **Session #26 @ MILITARY RIDGE : Third Way Web Development with HTMX (continued) by Michael Carducci**

When the world wide web launched in 1993, it presented a revolutionary new way to globally share information. The revolution didn't stop there. The web soon became a platform for building, hosting, and distributing entire applications. Today most applications are built as web applications yet the core capabilities of HTML remain mired in the Web 1.0 days. Ajax was the first of many "hacks" to build web applications that delivered the rich, responsive user experience that rivaled traditional fat-client applications. Early js libraries and frameworks overcame browser incompatibilities and provided the first abstractions to hide the hacks and today's frameworks are so powerful that conventional wisdom states they are the de-facto best practice for building modern web applications. But at what cost? We've gone full-circle. Today's SPAs have more in common with the fat client applications of the 90s (albeit with simplified deployment) than they do with the web. The modern UX of today's framework-driven SPAs is what users demand, thus we follow the ever-changing trends; but at what cost? Beyond the bloat, complexity, and ephemerality of the modern webdev toolchain; modern webdev practices have inadvertently abandoned the core ideas of the web that made the platform technologically, architecturally, and philosophically revolutionary. Leading thinkers in the web development space have long proclaimed that "not everything should be a SPA" however the alternative of a web 1.0 vanilla html application has very limited utility in the year 2024. Are these our only options, or does a "third way" exist?

### **Session #27 @ STARKWEATHER CREEK : Mastering Microservices: A Seven-Step Process by Rohit Bhardwaj**

Join us for a transformative captivating session where you'll embark on a journey of discovery as we unveil a comprehensive seven-step methodology designed to revolutionize your approach to API design and implementation. Throughout the session, we'll explore practical use cases drawn from diverse industries, allowing you to gain valuable insights into the intricacies of designing APIs for real-world scenarios. From taxi hailing giants like Uber and Lyft to social media titans such as Facebook and Instagram, you'll dissect the unique challenges and requirements driving API design in today's dynamic digital landscape. Guided by seasoned industry experts, you'll delve into the core principles of RESTful microservices architecture and learn how to apply them effectively in your own projects. Through engaging presentations, interactive exercises, and hands-on, you'll master essential concepts such as OData integration, industry best practices, and innovative design strategies. By the end of the session, you'll emerge with a deep understanding of the seven-step process for designing superior cloud-native RESTful microservices APIs. Armed with practical insights and invaluable experience, you'll be ready to tackle the challenges of modern software architecture head-on, driving innovation and excellence within your organization. Don't miss this opportunity to elevate your skills, expand your knowledge, and unlock the full potential of RESTful microservices architecture. Join us and take the first step towards architectural mastery today!

### **Session #28 @ TOWER HILL : Understanding the Java Platform Module System by Kirk Knoernschild**

As of Java 9, modularity is built in to the Java platform...Finally! Yet few teams are using it. And in reality, you may never use it...at least not for a while. However by understanding the module system, you're guaranteed to see the Java platform in a completely different light. In this session, we explore the default module system, how it works on the Java platform, and what's in the future for the Java Platform Module System.

11:30 - 1:15 PM : LUNCH & EXPERT PANEL DISCUSSION: STATE STREET BALLROOM

1:15 - 2:45 PM - Sessions

### **Session #29 @ BADGER STATE : The Java Sessions: Virtual Threads and Structured Concurrency by Daniel Hinojosa**

There is a new way of Threading, which means it is time to prepare. Project Loom has introduced Java Virtual Threads, which is now available in Java 21. Virtual Threads are small Threads meant to perform quick operations with the need to procure long-running OS threads, which can prove expensive. In this presentation, we will learn how to use these threads, what does it mean in relationship with the rest of the Java API, and what does it mean for third-party libraries.

### **Session #30 @ MILITARY RIDGE : Data-Centric in Action by Michael Carducci**

In 2017, an organization known as The Semantic Arts published their "data-centric manifesto"(<http://www.datacentricmanifesto.org/>) leading with this paragraph. &gt;"We have uncovered a root cause of the messy

# Greater Wisconsin Software Symposium

## -Session Schedule-

(event schedule as of May 17, 2024)

state of Information Architecture in large institutions and on the web today. It is the prevailing application-centric mindset that gives applications priority over data. The remedy is to flip this on its head. **"Data is the center of the universe; applications are ephemeral."** While the vision and ideas of this manifesto are compelling, implementation details are scarce leaving the potential out of reach of many busy developers and architects.

### **Session #31 @ STARKWEATHER CREEK : Securing the Digital Landscape: A Deep Dive into OWASP Top 10 for Applications, APIs, and LLMs by Rohit Bhardwaj**

Join us for an immersive journey into the heart of modern cybersecurity challenges. In this groundbreaking talk, we delve into the intricacies of securing your digital assets with a focus on three critical domains: applications, APIs, and Large Language Models (LLMs). As developers and architects, you understand the paramount importance of safeguarding your systems against evolving threats. Our session offers an exclusive opportunity to explore the industry-standard OWASP Top 10 vulnerabilities tailored specifically to your domain. Uncover the vulnerabilities lurking within your applications, APIs, and LLMs, and gain invaluable insights into mitigating risks and fortifying your defenses. Through live demonstrations and real-world examples, you'll witness firsthand the impact of security breaches and learn proactive strategies to combat them. Whether you're a seasoned architect seeking to fortify your organization's security posture or a developer striving to build resilient systems, this talk equips you with the knowledge and tools essential for navigating the complex landscape of cybersecurity.

### **Session #32 @ TOWER HILL : Refactoring Monolithic Software by Kirk Knoernschild**

Monoliths are out and microservices are in. Not so fast. Many of the benefits attributed uniquely to microservices are actually a byproduct of other architectural paradigms with modularity at their core.

2:45 - 3:00 PM : BREAK: STATE STREET BALLROOM FOYER

3:00 - 4:30 PM - Sessions

### **Session #33 @ BADGER STATE : The Java Sessions: Threading and Synchronizers by Daniel Hinojosa**

Threading has always been tough. Even with new frameworks that can make it easy, sometimes we don't have them at our disposal. This full-day session focuses on threading and the various synchronizers in Java. We will have material you can use as a reference and challenges that will help you remember some pitfalls to avoid.

### **Session #34 @ MILITARY RIDGE : VDD: Value Driven Development - 10 Golden Rules for incremental Greatness by Michael Carducci**

On the NFJS tour, there are questions that seem to come up again and again. One common example is "How do we determine which new tools and technologies we should focus our energy on learning?" another is "How do we stop management from forcing us to cut corners on every release so we can create better and more maintainable code?" which, after awhile becomes "How can we best convince management we need to rewrite the business application?" There is a single meta-answer to all these questions and many others.

### **Session #35 @ STARKWEATHER CREEK : Enterprise Architecture for Next-Gen Software Development by Rohit Bhardwaj**

This talk explores how cutting-edge technologies and trends will shape the future of enterprise software development, creating opportunities for innovation and efficiency. We'll discuss how to leverage these technologies within an Enterprise Architecture framework to build a robust roadmap that guides enterprises through technological advancements and competitive landscapes.

### **Session #36 @ TOWER HILL : Modularity: The Foundation of Modern Architectures by Kirk Knoernschild**

The architecture paradigms we're using are changing. The platforms we deploy our software to are changing. We are confronted with several new architecture paradigms to choose from, such as microservices and miniservices. Should we automatically discard some of the proven architectures we've used in the past, including more traditional web services? Likewise, new platforms, such as cloud, complicate the decision. Yet, at the heart of this transformation is modularity. From monoliths to microservices and everything in between, modularity is the foundation.