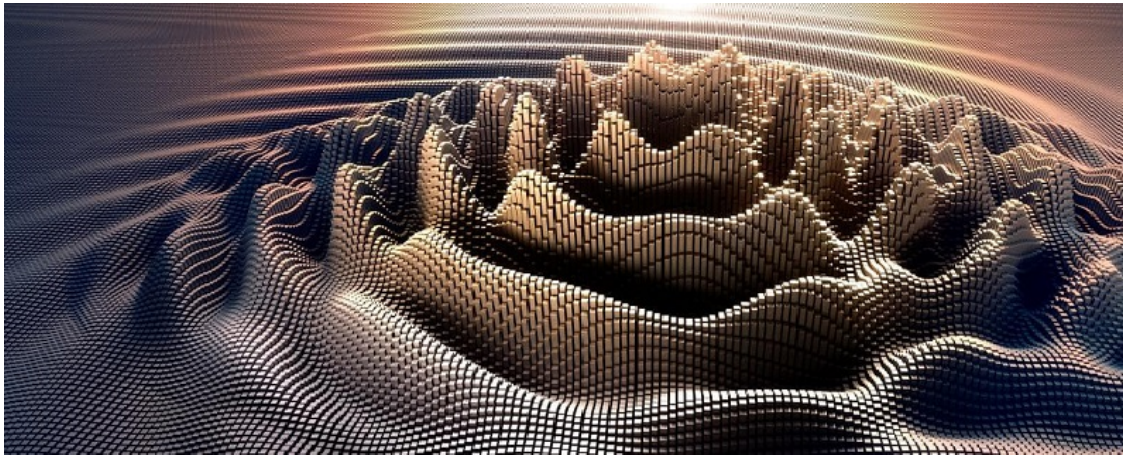


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The Need for Quantum Software Architecture

August 30, 2023—Quantum technology holds great potential for a new era of high-performance computing. But how will quantum hardware systems change our approach to software architecture?

In a new SEI Blog post, SEI researchers Daniel Justice and Andrew Mellinger write that software architecture will address many of the challenges of combining quantum and classical computing systems: "Software architecture provides a structured approach to designing quantum software systems that can effectively harness the power of quantum technologies."

The authors will explore the blog post's topics more deeply at the Workshop on Software Architecture Concerns for Quantum (WOSAQ) at IEEE Quantum Week on September 21.

[Read the blog post »](#)

[Learn about the workshop »](#)



[Zero Trust Industry Days 2023 Calls for Presenters](#)

The SEI invites established zero trust solution providers to submit a proposal by September 22.

[Insider Risk Management Symposium to Focus on Making the Fundamentals Stick](#)

Registration for the tenth annual event is now open.

[**See more news »**](#)



[The Need for Quantum Software Architecture](#)

Daniel Justice and Andrew Mellinger explore concerns software architects are likely to have when integrating quantum components into their systems.

[Product Management's Role in Software: A Fool's Game or an Evolving Adventure?](#)

Judy Hwang discusses the origins and intentions behind software product management and why it is a key enabler to success.

[**See more blogs »**](#)



[An Agile Approach to Independent Verification and Validation](#)

Justin Smith talks with Suzanne Miller about how to bring concepts from Lean and Agile software development into the practice of IV&V.

[Zero Trust Architecture: Best Practices Observed in Industry](#)

Matthew Nicolai and Nathaniel Richmond discuss five best practices in

implementing a zero trust architecture, their significance, and ways to empower your organization's zero trust transformation.

[**See more podcasts »**](#)



Latest Publications

[Emerging Technologies: Seven Themes Changing the Future of Software in the DoD](#)

This report describes the importance of advanced computing, advanced materials, artificial intelligence and machine learning, biotechnology, cybersecurity, digital transformation, and distributed computing to the Department of Defense and the software engineering community.

[U.S. Leadership in Software Engineering & AI Engineering: Critical Needs & Priorities Workshop - Executive Summary](#)

This workshop summary describes how to advance U.S. national interests through software and AI engineering and accelerate progress across virtually all scientific domains.

[A Holistic View of Architecture Definition, Evolution, and Analysis](#)

This report focuses on performing architectural decisions and architectural analysis, spanning multiple quality attributes, in a sustainable and ongoing way.

[Demonstrating the Practical Utility and Limitations of ChatGPT Through Case Studies](#)

This paper describes four case studies using GPT-3.5 to assess the practical utility of large language models such as ChatGPT.

[**See more publications »**](#)



Latest Videos

[Institutionalizing the Fundamentals of Insider Risk Management](#)

Dan Costa identifies themes of best practices observed over two decades of

researching insider threat.

[What's Wrong with ROI for Model-Based Analysis of Cyber-Physical Systems?](#)

Fred Schenker, Jerome Hugues, and Linda Parker Gates discuss the benefits of using a model-based approach to improve the design of a CPS's embedded computing resources.



[Upcoming Events](#)

Webcast - [Leveraging Software Bill of Materials Practices for Risk Reduction](#), September 6

Charles Wallen, Dr. Carol Woody, and Michael Bandor discuss how organizations can connect SBOMs to acquisition and development.

[Insider Risk Management Symposium 2023](#), September 14

Join us to hear about the latest challenges and best practices in insider risk management from recognized leaders in insider threat research and development.

[Supply Chain Risk Management Symposium 2023](#), October 11

Join us to hear about the latest challenges and best practices in SCRM from recognized leaders in SCRM research, as well as leading-edge practitioners from government and industry.

[DevSecOps Days Washington, D.C., 2023](#), October 12

At this free, SEI-hosted event, learn how to integrate security into your DevOps practices and transform your DevSecOps journey.

[Zero Trust Industry Days 2023](#), October 25-26

At this hybrid event presenters will contribute their ideas, solutions, and experiences for helping organizations form a zero trust implementation that meets their mission goals, budget, and time frame.

[See more events »](#)



[Upcoming Appearances](#)

[Billington CyberSecurity Summit](#), September 5-8

The SEI's Shing-hon Lau, Lauren McIlvenny, Kristopher Rush, Greg Touhill, and Nathan VanHoudnos will participate in a variety of panels.

[AFA Air, Space & Cyber Conference 2023](#), September 11-13

See CERT Division director Greg Touhill moderate a panel on cyber warfare, and visit the SEI at booth #231 in the exhibitor hall.

[InfoSec World 2023](#), September 25-27

The SEI's Randy Trzeciak, Tom Scanlon, Hasan Yasar, Tim Chick, Catherine Bernaciak, Clarence Worrell, and Mark Sherman will speak on a variety of topics.

[See more opportunities to engage with us »](#)



[Upcoming Training](#)

[Designing Modern Service-Based Systems](#)

October 17, 2023 (SEI Live Online)

[Design Guidelines and Patterns for Microservices](#)

October 24-27, 2023 (SEI Live Online)

[Advanced Topics in Incident Handling](#)

November 6-9, 2023 (SEI Live Online)

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