

SEI Bulletin

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To Lead Software and AI Engineering, U.S. Faces Five Critical Needs

September 27, 2023—A recently released workshop summary identifies five critical needs and priorities for building and maintaining U.S. leadership in software engineering and AI engineering.

In June, the SEI cohosted a workshop with the White House's Networking and Information Technology Research and Development (NITRD) program. Thought leaders from federal research funding agencies, research laboratories, mission agencies, and commercial organizations concluded that the software community needs new approaches to navigating the opportunities and challenges of AI in future software systems and advancing technologies in software development. The workshop summary discusses five themes that emerged about the accelerating pace of new technologies in the software development lifecycle and the part AI will play in shaping software systems.

The workshop marks a milestone for the SEI's national agenda for software engineering research and development. "Now that fast-moving AI

technologies are beginning to affect all aspects of society, it is more important than ever to bring together cross-sections of academia, industry, and government to inform a community strategy for building and maintaining U.S. leadership in software engineering," said Anita Carleton, director of the SEI's Software Solutions Division and the workshop's co-organizer.

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[DevSecOps Days DC Announces Keynote Speaker](#)

Rob Vietmeyer, Department of Defense chief software officer for the deputy CIO for information enterprise (DCIO(IE)), will share how the DCIO(IE) is implementing DevSecOps.

[Educators Discuss Generative AI, Experiential Learning, Neurodivergence, and More at 20th Anniversary Workshop](#)

College-level teachers of software engineering, computer science, and related fields met at the long-running SEI workshop in August.

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[Harnessing the Power of Large Language Models For Economic and Social Good: 4 Case Studies](#)

This blog post, the second in a series, outlines four case studies that explore the potential of large language models, such as ChatGPT, and explores their limitations and future uses.

[Harnessing the Power of Large Language Models For Economic and Social Good: Foundations](#)

This blog post explores the capabilities and limitations of large language models.

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[Latest Podcasts](#)

[Insider Risk Management in the Post-Pandemic Workplace](#)

Dan Costa and Randy Trzeciak discuss how remote work in the post-pandemic world is changing expectations about employee behavior monitoring and insider risk detection.

[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.

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[Latest Publications](#)

[Why Your Software Cost Estimates Change Over Time and How DevSecOps Data Can Help Reduce Cost Risk](#)

Early software cost estimates are often off by over 40 percent. This paper discusses how programs must continually update estimates as more information becomes available.

[Insider Threat Program Evaluation](#)

This package contains workbooks and support materials for an Insider Threat Program Evaluation, an evidence-based, capability-level assessment of an organization's insider threat program against a reference model.

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

This summary of a June workshop identifies critical needs and priorities for advancing U.S. interests through software and AI engineering and accelerating progress across virtually all scientific domains.

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Latest Videos

[Evaluating Trustworthiness of AI Systems](#)

Carol Smith and Carrie Gardner discuss how to evaluate trustworthiness of AI systems given their dynamic nature and the challenges of managing ongoing responsibility for maintaining trustworthiness.

[Leveraging Software Bill of Materials Practices for Risk Reduction](#)

Charles Wallen, Carol Woody, and Michael Bandor discuss how organizations can connect software bill of materials (SBOM) to acquisition and development.



Upcoming Events

Webcast - [Cyber Supply Chain Risk Management: No Silver Bullet](#), October 2
Brett Tucker emphasizes using robust enterprise risk management to achieve operational resilience in the cyber supply chain.

[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

[Grace Hopper Celebration](#), September 26-29

The SEI is a sponsor of the Grace Hopper Celebration, the world's largest gathering of women technologists. It is produced by AnitaB.org and presented in partnership with ACM.

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Upcoming Training

[Advanced Topics in Incident Handling](#)

November 6-9, 2023 (SEI Live Online)

[Insider Risk Management: Measures of Effectiveness](#)

November 14-16, 2023 (SEI Live Online)

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