SEI Bulletin

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SEI Leads First Independent Study on Technical Debt in Software-Intensive DoD Systems

December 20, 2023—Many software-intensive programs in the Department of Defense (DoD) have started to actively manage technical debt, but their practices are often inconsistent and deprioritized, according to a new study by the SEI. The 2022 National Defense Authorization Act mandated an independent study of technical debt in DoD software-intensive systems. The SEI conducted the research earlier this year and recently released a report on its findings and recommendations.

The DoD must manage technical debt to improve modernization of software-driven capability at a cadence that stays ahead of emerging threats. The study's broad-ranging findings give a first-ever snapshot of the state of technical debt in DoD software programs. "The DoD is a very large enterprise, so it is not surprising that we found examples of all three stages of technical debt management," said Ipek Ozkaya, the technical director of the Engineering Intelligent Software Systems group at the SEI and a coauthor of the study.

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FloCon 2024 Announces Full Program and Continuing Education Units

Registration is open for the January conference on using data to defend networks.

<u>Software Engineering Institute Establishes AI Security Incident Response</u> Team

The SEI formed the Artificial Intelligence Security Incident Response Team (AISIRT) to help ensure the safe and effective development and use of AI.

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<u>Acquisition Archetypes Seen in the Wild, DevSecOps Edition: Clinging to the Old Ways</u>

William Novak draws on SEI experiences conducting independent technical assessments to examine problems common to disparate acquisition programs.

<u>Applying Generative AI to Software Engineering: Navigating Ethical and Educational Landscapes</u>

John Robert and Douglas Schmidt explore the application of generative AI in software engineering with an emphasis on the ethical and educational landscapes.

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The Cybersecurity of Quantum Computing: 6 Areas of Research

Thomas Scanlon discusses how to create the discipline of cyber protection of quantum computing and outlines six areas of future research in the field.

User-Centric Metrics for Agile

Will Hayes, Patrick Place, and Suzanne Miller discuss the importance of user stories in Agile metrics.

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Report to the Congressional Defense Committees on National Defense Authorization Act (NDAA) for Fiscal Year 2022 Section 835 Independent Study on Technical Debt in Software-Intensive Systems

This independent study of technical debt in Department of Defense (DoD) software-intensive systems gives a first-ever snapshot of the state of technical debt in DoD software programs.

<u>Assessing Opportunities for LLMs in Software Engineering and Acquisition</u>

This white paper examines how decision makers can assess the fitness of large language models (LLMs) to address software engineering and acquisition needs.

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Connecting Stakeholders for DoD Software Systems

Hasan Yasar highlights how the upcoming DoD Weapon Systems Software Summit will play a pivotal role in creating effective solutions for securely delivering robust software capabilities on time and on budget.

Cyber Supply Chain Risk Management: No Silver Bullet

Brett Tucker emphasizes using robust enterprise risk management to achieve operational resilience in the cyber supply chain.



FloCon 2024, January 9-11, 2024

FloCon centers on improving network security by analyzing a variety of data supported by innovative machine learning, hardware, and network storage.

How Do You Know When You Need a Systems Engineer? January 10, 2024 In this webcast, Suz Miller, Jeannine Siviy, and John Wood will discuss when and how to introduce fit-for-use systems engineering capability to ensure project success and business value.

<u>The Future of Software Engineering and Acquisition with Generative Al</u>, January 24, 2024

In this webcast, SEI researchers will explore the future of software engineering and acquisition using generative AI technologies.

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Insider Risk Management: Measures of Effectiveness

February 20-22, 2024 (SEI Arlington, Va.)

Software Architecture Design and Analysis

March 5-8, 2024 (SEI Live Online)

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