

SEI Bulletin

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Software and Systems Collaboration in the Era of Smart Systems

March 16, 2022 — A [new podcast](#) features SEI CEO and Director Paul Nielsen talking about how the advent of smart systems has led to a growing need for effective collaboration between the disciplines of systems engineering and software engineering. The discussion with SEI principal researcher Suzanne Miller covers artificial intelligence, machine learning, and Agile business processes, among other topics.

"The work that has been ongoing with DevOps, which leads to smaller incremental changes, but very rapidly, helps tame this exponential growth in science and technology," said Nielsen in the podcast. Long-term system planning is easier when broken down to Agile sprints or DevOps quick development cycles. "It is much easier to tame the future because you can see that far."

Watch the video on our [website](#) or [YouTube](#). Find the SEI Podcast series wherever you get your podcasts: [Apple Podcasts](#), [Google Podcasts](#), [TuneIn](#), [SoundCloud](#), [Stitcher](#), or [Spotify](#).

Read Nielsen's related blog post, "[Systems Engineering and Software Engineering: Collaborating for the Smart Systems of the Future.](#)"



[SEI Launches Mothra for Big-Data Network Flow Analysis](#)

The open source Mothra libraries enable big-data analysis engine Apache Spark to process network flow information.

[CERT Division Director Touhill Receives Leadership Honors](#)

Gregory J. Touhill, CERT Division director, recently received recognition from two organizations for his contributions to cybersecurity practice and leadership.

[Anita Carleton Elected Fellow of IEEE](#)

Anita Carleton, director of the SEI Software Solutions Division (SSD) has been elected as a Fellow of IEEE.

[See more news »](#)



[How Easy Is It to Make and Detect a Deepfake?](#)

Catherine Bernaciak and Dominic Ross describe the technology underlying the creation and detection of deepfakes and assess current and future threat levels.

[A Model-Based Tool to Assist in the Design of Safety-Critical Systems](#)

Sam Procter discusses how the design of critical systems is becoming increasingly challenging as they increase in sophistication and complexity.

[The Latest Work from the SEI: The Future of Software Engineering, Ethical AI, Cloud Adoption, and Machine Learning](#)

Doug Schmidt summarizes recent SEI publications in machine learning, ethical artificial intelligence, cloud adoption, and mixed-criticality systems.

[See more blogs »](#)



Latest Podcasts

[Software and Systems Collaboration in the Era of Smart Systems](#)

SEI Director Paul Nielsen talks with principal researcher Suzanne Miller about how the advent of smart systems has led to a growing need for effective collaboration between the disciplines of systems engineering and software engineering.

[Securing the Supply Chain for the Defense Industrial Base](#)

Gavin Jurecko and Katie Stewart discuss risks in defense industrial base (DIB) supply chains and the SEI's work to mitigate them.

[Building on Ghidra: Tools for Automating Reverse Engineering and Malware Analysis](#)

Jeffrey Gennari and Garret Wassermann talk with Suzanne Miller about Kaiju, tools that help analysts take advantage of the NSA's Ghidra framework for malware analysis and reverse engineering.

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Latest Publications

[An Analysis of How Many Undiscovered Vulnerabilities Remain in Information Systems](#)

This paper examines the paradigm that the number of undiscovered vulnerabilities is manageably small through the lens of mathematical concepts from the theory of computing.

[PHITE: Improved Situational Awareness through AI at the Edge](#)

This fact sheet describes the Portable, High-Performance Inference at the Tactical Edge (PHITE) project and how it supports Department of Defense efforts.

[See more publications »](#)



Latest Videos

Webcast - [Engineering Tactical and AI-Enabled Systems](#)

Grace Lewis and Shane McGraw discuss how the SEI is applying research, through its highly successful Tactical and AI-Enabled Systems (TAS) initiative, to develop foundational principles, innovative solutions, and best practices.

Webcast - [Acquisition Disasters? Ideas For Reducing Acquisition Risk](#)

Fred Schenker and Linda Parker Gates discuss the status quo, alternative approaches, and how the community of cyber-physical system acquirers and suppliers can improve.



Upcoming Events

[Ask Us Anything: Zero Trust Edition](#), March 18

In this free webcast, SEI CERT Division Director Greg Touhill and Dr. Chase Cunningham, chief strategy officer at Ericom Software, take your questions and discuss what you need to implement a Zero Trust strategy.

[DevSecOps Days 2022 Pittsburgh](#), April 27

This free, virtual event gives you the opportunity to elevate how you integrate security into your DevOps practices and transform your DevSecOps journey.

[AADL/ACVIP User Days 2022](#), May 5

Speakers at this free forum will present the latest on the Architecture Analysis and Design Language (AADL), the Architecture-Centric Virtual Integration Process (ACVIP), and associated tools.

[International Conference on Software and Systems Processes 2022](#), May 20-22

This conference gathers researchers and practitioners to share about software and system processes and global software engineering.

Note: The SEI is evaluating all upcoming courses, conferences, and events case-by-case in light of COVID-19 developments. Check individual event pages for the latest information.

[See more events »](#)



Upcoming Training

[Documenting Software Architectures](#)

April 26-29, 2022 (SEI, Live Online)

[Design Guidelines and Patterns for Microservices](#)

May 2-5, 2022 (SEI, Live Online)

[Insider Threat Analyst](#)

May 3-5, 2022 (SEI, Live Online)

Note: The SEI is evaluating all upcoming courses, conferences, and events case-by-case in light of COVID-19 developments. Check individual training pages for the latest information. You may also contact us at courseregistration@sei.cmu.edu or +1-412-268-7388.

[See more courses, including live-online and eLearning offerings »](#)



Employment Opportunities

[Senior Software Developer](#)

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[All current opportunities »](#)

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