

# SEI Bulletin

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## Envisioning the Future of Software Engineering

**February 2, 2022** — “Software weaknesses are a direct reflection of inadequacies in the state of the art and practice of software engineering, and they can affect millions of people,” according to the study *Architecting the Future of Software Engineering*, published late last year. The SEI led this multi-year research and development vision and roadmap for engineering next-generation software-reliant systems, with input from academia, government, and industry. Anita Carleton, director of the SEI’s Software Solutions Division, and Forrest Shull, the SEI’s lead for defense software acquisition policy research, discuss the study in a newly released [SEI podcast](#).

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](#), and [Spotify](#).

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### [Anita Carleton Elected Fellow of IEEE](#)

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

### [SEI Coauthors Responsible AI Guidelines](#)

The new report from the Defense Innovation Unit makes progress towards operationalizing the Department of Defense's Ethical Principles for AI.

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### [A Cybersecurity Engineering Strategy for DevSecOps that Integrates with the Software Supply Chain](#)

Carol Woody discusses the challenges of cybersecurity when integrating software from the supply chain.

### [How Do You Trust AI Cybersecurity Devices?](#)

Grant Deffenbaugh and Shing-hon Lau describe how they seek to test AI and ML cybersecurity devices against realistic attacks in a controlled network environment.

### [What is Explainable AI?](#)

Violet Turri introduces explainable artificial intelligence (XAI), a powerful tool in answering critical How? and Why? questions about AI systems.

[\*\*See more blogs »\*\*](#)

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### [Envisioning the Future of Software Engineering](#)

Anita Carleton and Forrest Shull discuss the study *Architecting the Future of*

*Software Engineering.*

### [Implementing the DoD's Ethical AI Principles](#)

Alex Van Deusen and Carol Smith of the SEI's AI Division discuss their work with the Defense Innovation Unit of the U.S. Department of Defense to develop guidelines for the responsible use of AI.

### [Walking Fast Into the Future: Evolvable Technical Reference Frameworks for Mixed-Criticality Systems](#)

Suzanne Miller talks with Nickolas Guertin and Douglas Schmidt about strategies for creating architectures for large-scale, complex systems that comprise functions with a wide range of requirements.

[\*\*See more podcasts »\*\*](#)

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## [\*\*Latest Publications\*\*](#)

### [DevSecOps Days Washington, D.C. 2021](#)

These presentations were given at at the SEI-hosted, virtual DevSecOps Days conference.

### [Using Machine Learning to Increase NPC Fidelity](#)

This technical report describes how the authors used machine learning modeling to create decision-making preferences for non-player characters (NPCs).

### [SEI Research Review 2021](#)

Videos and presentations from the 2021 SEI Research Review.

[\*\*See more publications »\*\*](#)

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## [\*\*Latest Videos\*\*](#)

### YouTube - [DevSecOps Days Washington, D.C. 2021](#)

Presentations and talks from DevSecOps Days Washington, D.C. 2021.

YouTube - [2021 SEI Research Review](#)

Presentations and talks from the 2021 SEI Research Review.

Webcast - [A Cybersecurity Engineering Strategy for DevSecOps](#)

Carol Woody presents a strategy for cybersecurity engineering in DevSecOps environments.

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## Upcoming Events

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

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, 2022

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 »](#)

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## Upcoming Training

[Cybersecurity Oversight for the Business Executive](#)

March 15-16, 2022 (SEI, Live Online)

[Introduction to the CERT Resilience Management Model](#)

April 5-6, 2022 (SEI, Live Online)

## [Designing Modern Service-Based Systems](#)

April 25, 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](mailto:courseregistration@sei.cmu.edu) or +1-412-268-7388.

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



## [Employment Opportunities](#)

[Senior System Designer](#)

[eLearning Administrator](#)

**[All current opportunities »](#)**

**Carnegie Mellon University**  
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