SEI Bulletin

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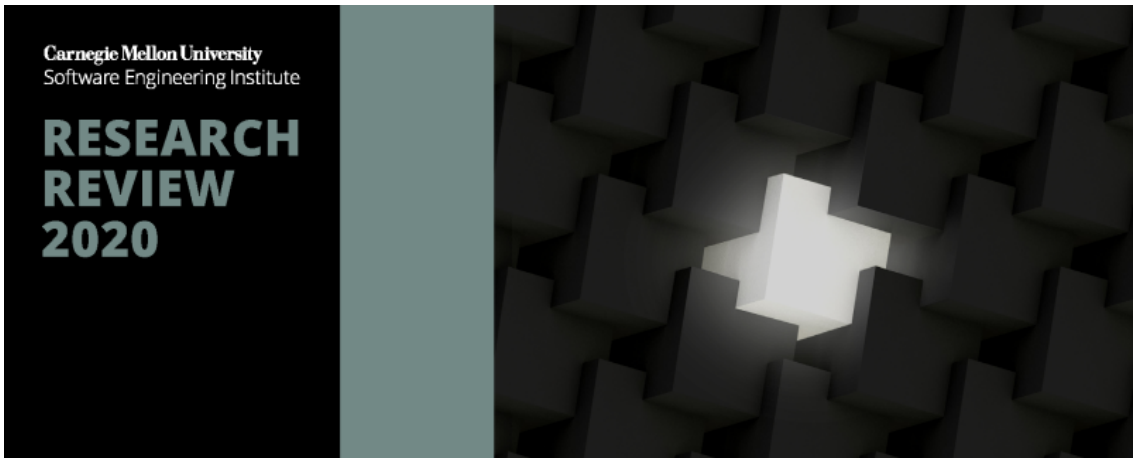

2020 Research Review Showcases the SEI's Fundamental Research

November 25, 2020 — The Software Engineering Institute held its annual Research Review the week of November 9. The four-day, virtual event featured 30 presentations and panels on the institute's fundamental research conducted for the Department of Defense in fiscal year 2020. Topics include artificial intelligence and advanced computing, cybersecurity, software development, and Agile and DevOps development. The presentation decks and posters are available for download in the SEI's Digital Library, and videos of the sessions are available on the SEI's YouTube channel.

"We dig into the enduring challenges facing the DoD, and our decades-long engagement has informed our deep and nuanced understanding of the challenges it faces," wrote SEI Chief Technical Officer Tom Longstaff in a summary of the event's featured projects. "Our research springs from the DoD's need for software innovation and cybersecurity that continually evolves in support of its intensifying mission."

Download the 2020 Research Review presentations and posters »

Watch the 2020 Research Review sessions »

SEI Research Review 2020

CMU SEI Research Review 2020 Agenda

Booklet - CMU SEI Research Review 2020 Research Review Project Summaries

Day 1: Artificial Intelligence (AI) and Advanced Computing
Presentations and Posters
Video

Day 2: Cybersecurity
Presentations and Posters
Video

Day 3: Software Development
Presentations and Posters
Video

Day 4: Agile and DevOps Development
Presentations and Posters
Video

SEI News

SEI Releases OCTAVE FORTE Model for Enterprise Risk Management
The OCTAVE FORTE (OCTAVE For the Enterprise) model for enterprise risk management helps executives and other decision makers understand and prioritize the complex risks affecting their organizations.

AI Engineering Report Highlights Needs and Challenges to Focus Emerging Discipline
The conclusions of a 2019 SEI workshop describe nine areas of need for the defense and national security AI systems of the future.

SEI Releases Software Engineering Measurement and Analysis Course Materials
Presentations and sample datasets for three courses on software product

and process improvement are now available to download from the SEI website.

See more news »

Latest Blogs

Show Me Agility: Agile Strategy Execution
Linda Parker Gates writes about agile strategy as a role-based enterprise capability and discusses the use of data in strategy execution.

Cat and Mouse in the Age of .NET
Brandon Marzik explores penetration testers' shift from attacks on the PowerShell scripting language to the .NET framework.

What Is Digital Engineering and How Is It Related to DevSecOps?
David Shepard and Julia Scherb introduce some of the concepts of digital engineering and relate them to more familiar concepts, such as DevSecOps.

Mission-Based Prioritization: A New Method to Sequence Features, Capabilities, and Epics
Keith Korzec presents a new method to prioritize an Agile backlog using mission-based parameters.

See more blogs »

Latest Podcasts

Challenging the Myth of the 10x Programmer
Bill Nichols, a researcher in the SEI's Software Solution Division, recently examined the widely held notion that some programmers are much better than others.

A Stakeholder-Specific Vulnerability Categorization
Eric Hatleback, Allen Householder, and Jonathan Spring, vulnerability and incident researchers, discuss SSVC and go through a sample scoring vulnerability.

Optimizing Process Maturity in CMMC Level 5
Andrew Hoover and Katie Stewart, CMMC model architects, discuss the Level 5 process maturity requirements: standardizing and optimizing a documented approach for CMMC.

See more podcasts »

Latest Publications

Software Product Lines Curriculum
These materials from our three software product line courses are designed to help organizations produce a set of related products to achieve increased quality, significant cost reductions, and quicker time to market.

Advancing Risk Management Capability Using the OCTAVE FORTE Process
OCTAVE FORTE is a process model that helps organizations evaluate their security risks and use ERM principles to bridge the gap between executives and practitioners.

Analytic Capabilities for Improved Software Program Management
This white paper describes an update to the SEI Quantifying Uncertainty in Early Lifecycle Cost Estimation approach.

See more publications »

Latest Videos

Webcast - What Is Cybersecurity Engineering and Why Do I Need It?
Carol Woody and Rita Creel discuss how cybersecurity engineering knowledge, methods, and tools throughout the lifecycle of software-intensive systems will reduce their inherent cyber risk and increase their operational cyber resilience.

Webcast - Threats for Machine Learning
Mark Sherman explains where machine learning applications can be

attacked, the means for carrying out the attack, and some mitigations you can use.

Webcast - Cyber Workforce Development and the Cybersecurity Engineer
Dennis Allen talks about how the SEI's Cyber Workforce Development team aims to streamline the building of cybersecurity expertise and amplify it to a globally distributed workforce.

Upcoming Events

Busting the Myths of Programmer Productivity, December 8
Are the great programmers really 10 times faster than the rest? What does this difference in productivity even mean?

Artificial Intelligence for Humanitarian Assistance and Disaster Response Workshop, December 12
This workshop establishes dialogue between the AI and Humanitarian Assistance and Disaster Response (HADR) communities.

FloCon 2021, January 12-15, 2021
The theme of Using Data to Defend is more critical than ever, given the security challenges of moving customers and vendors online and supporting a remote workforce.

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

Software Architecture: Principles and Practices
January 19-22, 2021 (SEI, Live Online)

Cybersecurity Oversight for the Business Executive
January 20-21, 2021 (SEI, Live Online)

Insider Threat Program Manager: Implementation and Operation
January 26-28, 2021 (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

Head of AI Engineering

Machine Learning Engineer

Cybersecurity Engineer

All current opportunities »

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Software Engineering Institute

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