FORGING RESEARCH IN SOFTWARE, AI, AND CYBERSECURITY

OUR NATION'S GOVERNMENT, MILITARY, AND CIVILIAN ORGANIZATIONS work to protect our nation's security and deter war. Their capabilities increasingly rely on complex, software-based systems and networks. At the Carnegie Mellon University Software Engineering Institute (SEI), a federally funded research and development center, we work continually to improve software development, use, and security, because organizations need

- Software to do more. Software delivers capability that gives or maintains an edge over competitors or adversaries.

- Software to be deployed rapidly. Being able to put software into use as soon as possible assures timely response to operational needs.

- Software cost to be affordable. The total cost of software, despite increased capability, needs to be predictable and where possible reduced.

- Software to be secure. Mission- and business-critical software must be free from exploitable defects, especially in today's environment of rising cyber threats.

Inventing and Deploying

Combining strengths in technology research, development, and application, we bridge the gap from the invention of the possible to the deployment of the practical.

We research complex software engineering, cyber operations, and artificial intelligence (AI) engineering to develop solutions for

- Streamlining rapid, iterative approaches to development and fielding

- Driving software budget discipline and affordability

- Assuring cyber workforce readiness

- Improving cyber operations to defend systems and networks at the speed of relevance

- Leveraging emerging technologies

We apply novel tools, techniques, and practices throughout the software acquisition and cyber operations lifecycle. And, we back up our technologies with the know-how to provide customers with both rapid-response and long-term support.
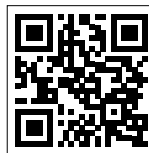
For more information about the Software Engineering Institute, scan the QR code using your smartphone camera or point your web browser at **sei.cmu.edu**

Contact us when you

- Face a hard problem or a technical challenge that is a strategic priority

- Are uncertain how to understand or approach a new problem

- Need an independent technical assessment

- Need to work with a partner that can perform both classified and unclassified work

HOW THE SEI WORKS WITH YOU

The SEI takes innovation from concept through research and development and into application. Although we are an R&D center, our contribution doesn't end there; we also make things that software and cybersecurity professionals can use—prototypes, tools, methods, curricula, and more. We research, develop, and apply our work with organizations in...

The private sector—Commercial organizations achieve strategic advantage by rapidly applying improved software engineering technology. We combine our expertise with yours to mature new technology. While all of industry benefits, our commercial R&D sponsors enjoy early access to results they can use to improve development, streamline operations, and gain an edge.

Government—As a federally funded research and development center (FFRDC), we fulfill core DoD software engineering needs that are unmet by in-house and private-sector R&D centers.

Academia—As part of the CMU community, the SEI contributes to the intellectual capital of the university through research, collaboration, and teaching. Our technical staff maintain close relationships with top researchers and faculty in cybersecurity and software engineering at CMU, and we frequently collaborate with other universities as well. SEI staff publish dozens of papers in academic journals and frequently speak at top conferences in the field.

HOW TO ENGAGE WITH US

Learn from our training
Available as eLearning, live online, and in person, our cybersecurity courses and certificate programs help you tackle cybersecurity challenges in areas such as applied data science, insider risk and threat, secure software by design, and software assurance.

Report a vulnerability
Report security vulnerabilities when a vendor has not responded to your direct contact with them. We work with affected vendors to resolve vulnerabilities in these types of cases.

Use our tools
Our tools and methods help you conduct forensic examinations, analyze vulnerabilities, monitor large-scale networks using flow data, and more.

Request an assessment
Gauge your exposure to insider threat with CERT Insider Threat Vulnerability Assessments. Evaluate your organization's operational resilience using the CERT-RMM Capability Appraisal assessment. Evaluate the C code in your software using SCALe Conformance Analysis.

Get involved with our research
We study and solve problems that have widespread implications for cybersecurity. You can explore opportunities to sponsor our research, collaborate with us, or join our team.

Attend an event
We sponsor events including FloCon, a network security conference where attendees discuss the next generation of flow-based analysis techniques; the National Insider Risk Management Symposium, which assembles information about mitigated insider risks to share successes and challenges; and NatCSIRT, where CSIRT organizations responsible for protecting the security of nations, economies, and critical infrastructures meet.

Explore our blogs, Cyber Minute videos, podcasts, and webinars
Our researchers publish their insights on the SEI blog. Cyber Minutes provide short videos on current cybersecurity topics. Our podcasts and webinars cover topics that include DevOps, insider threat, secure coding, and improving your security program.

About the SEI

Always focused on the future, the Software Engineering Institute (SEI) advances software as a strategic advantage for national security. We lead research and direct transition of software engineering, cybersecurity, and artificial intelligence technologies at the intersection of academia, industry, and government. We serve the nation as a federally funded research and development center (FFRDC) sponsored by the U.S. Department of Defense (DoD) and are based at Carnegie Mellon University, a global research university annually rated among the best for its programs in computer science and engineering.

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