Mehdi Tarrit Mirakhorli, Ph.D.

Tenured, Professor of Computer Science
Director of Indo-Pacific Cybersecurity & Software Assurance Laboratory
University of Hawaii at Manoa, Hawaii AI Institute, Hawaii Data Science Institute

Emeritus Director of Research & Endowed Kodak Scholar,
ESL Global Cybersecurity Institute (GCI)
Rochester Institute of Technology (RIT)

https://mehdimirakhorli.github.io/; *Phone*: 630-788-3810
U.S. Citizen, Clearances: Secret, Public Trust

Software engineering and cybersecurity expert with 15 years of experience in software engineering, cybersecurity, Artificial Intelligence and industrial consulting. Proven ability to bridge technical and legal domains by providing clear, concise, and authoritative opinions in intellectual property disputes, software patents, trade secrets, and compliance cases. Extensive experience simplifying complex technical concepts for judges, juries, and legal teams.

Litigation Consulting, Legal Skills
- Intellectual Property Litigation
- Trade Secret and Copyright Investigations
- Compliance with Software Standards
- Source Code and Software Patent Analysis
- Software Damage Analysis and Cost Estimation for Litigation
- Experienced in collaborating with legal teams for strategy development.
- Skilled in preparing reports, affidavits, and depositions.

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1. Professional and Administrative Appointments

Professor   2023-Present
Director of Indo-pacific Cybersecurity and Software Assurance
Laboratory
> Information and Computer Sciences
> University of Hawaii at Manoa
> Leading Research, Development and Technology Transition in
> Software, Cybersecurity and Artificial Intelligence.

Program Manager (CTR)   2022 – 2024
> *(In Support of President Biden's Executive Order on Cybersecurity)*
> Cybersecurity and Infrastructure Security Agency (CISA)
> U.S. Department of Homeland Security (DHS)

Director of Research   2022-2023
> ESL Global Cybersecurity Institute (GCI)
> Rochester Institute of Technology
> Oversaw the institution's R&D in cybersecurity, AI and Software. Managed Non-Disclosure Agreements (NDAs) between participating faculty, laboratories and external entities. Lead the institutions R&D initiatives, and industry engagements.

Associate Professor of Software Engineering   2020-2023
> Software Engineering & Global Cybersecurity Institute
> Rochester Institute of Technology

Pro Bono Advisor for Social Impact Ventures   2019-Present
> Knowledge Impact Network

Endowed Kodak Chair of Software Engineering   2019-2023
> Rochester Institute of Technology

Founding Director   2014-Present
> Software Design and Productivity Laboratory
> Rochester Institute of Technology

Assistant Professor of Software Engineering   2014-2019
> Software Engineering & Data Science Department
> Director of Software Design and Productivity Laboratory
> Rochester Institute of Technology

Faculty Fellow   May 2017-August 2017
> Air Fore Research Laboratory (AFRL), Rome, NY

Visiting Scientist   June-August 2014
> Software Engineering Institute and Carnegie Mellon University
> 4500 Fifth Ave, Pittsburgh, PA 15213

Researcher   2013-2014

U.S. Department of Homeland Security (DHS)
Contractor: DePaul University, Chicago, IL, U.S.A
Project: Security Architecture Protection Layer

Research Assistant   2009-2013

Software and Requirements Engineering Center (SAREC)
School of Computing, DePaul University
Chicago, IL, U.S.A
Advisor: *Prof. Jane Cleland-Huang*

Advisory Board Member, Consultant   2014-Present

Various Industries

Adjunct Teaching Faculty   2007- 2009

Department of Computer Engineering
Iran University of Science and Technology (IUST), Behshahr, Iran

2. Education

Ph.D., Computer Science, DePaul University   2009/2014
M.S., Software Engineering, National University   2006-2008
B.S., Software Engineering, Teacher Training University   2002-2006

3. Research & Development (R&D) Awards

Recipient of over **$21,668,501** (USD) in competitive grants, contracts and awards.

G23.   **National Science Foundation (NSF)**
CAREER: Sandbox for Cybersecurity Research
Investigator: Mehdi Mirakhorli
Amount: $400,000
Duration: 2025-2028

G22.   **National Science Foundation (NSF)**
Planning: DCL EPSCOR: SaTC Frontier: Conceptualization and Planning Center for Resilient by Design Software and Systems
Investigator: Mehdi Mirakhorli, Anthony Preuma, Hamid Bagheri
Amount: $120,000
Duration: 2025-2026

G21.   **Transportation Cybersecurity Center for Advanced Research and Education (CYBER-CARE)**
Enhancing Cybersecurity in Transportation Systems: Software Considerations and Public Perceptions of Risk and Security.
Investigator: Roger Chen (PI), Mehdi Mirakhorli, Anthony Peruma (Co-PI)
Amount: $139K
Duration: 2024-2025

G20. **Cybersecurity and Infrastructure Security Agency (CISA)**
National Vulnerability Intelligence Platform (NVIP), Use of AI to Automated Vulnerability Intelligence
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $4,840,000
Duration: 2022-2023

G19. **U.S. Department of Homeland Security (DHS)**
Hierarchical Software Quality Assurance, Use of LLMs to Inspect Software Quality
Investigators: Clemente Izurieta (Lead PI at Prime Montana State University), Mehdi Mirakhorli (PI at RIT)
Amount: $4,000,000
Duration: 2022-2025

G18. **CAREER, National Science Foundation (NSF)**
CAREER: Synthesizing Architectural Tactics, Use of advance big-data mining and machine learning techniques to generate code
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $403,725
Duration: 2020-2025

G17. **National Institutes of Health (NIH), National Institute on Drug Abuse (NIDA)**
A Randomized Controlled Trial of a Digital, Self-Guided, Avatar Assisted - Cognitive Behavioral Therapy Platform to Treat Addiction: Digital RITchCBT vs. Standard CBT
Investigators: Caroline Easton (PI), Linwei Wang (Co-PI), Mehdi Mirakhorli (Co-PI)
Amount: $4,700,000

Duration: 2022-2025

G16. **National Science Foundation (NSF)**
Collaborative Research: EAGER: Towards a Design Methodology for Software-Driven Sustainability and Sustainable Disposal
Investigators: Mehdi Mirakhorli (PI at RIT), Eunsuk Kang (CMU), Pooyan Jamshidi (SC)
Amount: $300,000, CMU/USC, RIT's share $100K.
Duration: 2022-2024

G15. **U.S. Air Force**
CRUISE: Cyber Vulnerability Assessments of System Requirements Specifications (SyRS), Use of Machine Learning for Cyber Vulnerability Analysis.
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $700,000
Duration: 2019-2021

G14. **Defense Advanced Research Projects Agency (DARPA)**
An Architecture-Centric Verification and Reasoning Approach For Resilient Systems, Use of Machine Learning and Formal Methods to Inspect Embedded systems
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $619,034

Duration: 2019-2022

G13. U.S. Department of Homeland Security (DHS)
National Vulnerability Intelligence Platform (NVIP), Large Scale Web-Mining and AI to Capture Vulnerability Intelligence from the World Wide Web Content.
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $ 440,294
Duration: 2019-2021

G12. National Science Foundation (NSF)
CRI: CI-NEW: Collaborative Research: Constructing a Community-Wide Software Architecture Infrastructure
Sole PI at RIT; Sam Malek (PI at UCI), Joshua Garcia (Co-PI at UCI), Nenad Medvidovic (Lead PI at USC), Rick Kazman (PI at UH), Yuanfang Cai (PI at Drexel), and Lu Xiao (PI at Stevens)
Amount: $1.7M, RIT's share: $374,238
Duration: 2018-2021

G11. National Science Foundation (NSF)
SaTC: CORE: Small: Characterizing Architectural Vulnerabilities
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $439,135
Duration: 2018-2021

G10. National Science Foundation (NSF)
REU Site: Cultivating Next Generation Software Engineering Researchers
Investigators: Mehdi Mirakhorli (PI), Mohamed Wiem Mkaouer (co-PI)
Amount: $360,000
Duration: 2017-2020

G9. U.S. Department of Homeland Security (DHS)
An Automated Framework for Characterizing Vulnerabilities, Use of AI/ML to characterize textual vulnerability reports.
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $160,000
Duration: 2016-2018

G8. U.S. Department of Homeland Security (DHS)
Common Architecture Weakness Enumerations
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: Phase II: $43,050, Phase I: $24,833), Total: $67,883
Duration: 2016-2017

G7. National Science Foundation (NSF)
CRI:CCF: Planning and Prototyping a Future Instrument for Software Architecture Community (CI-P)
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $30,000
Duration: 2016-2018

G6. **National Science Foundation (NSF)**
SHF: Bringing Design Thinking into Developers' Coding Activities through an Architectural Tactic Recommender System
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $80,000
Duration: 2015-2017

G5. **U.S. Department of Homeland Security (DHS)**
Archie: Security Architecture Protection Layer
Investigators: Jane Cleland Huang (PI), Mehdi Mirakhorli (Co-PI)
Amount: $30,000
Duration: First six months of 2014

G4. **Eaton Corporation**
Security Risk Assessment of Vendors Providing Chipsets for Cybersecurity Root of Trust
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $24,630
Duration: 2021-2022.

G3. **Open Technology Funds Corporation**
Red-Team Information Security Services for Open-source Internet Freedom Software
Investigators: Justin Pelletier (PI), Mehdi Mirakhorli (Co-PI)
Amount: Indefinite Delivery, Indefinite Quantity (IDIQ) contract
Duration: 2021-2022

G2. **RIT**
SMARTSec: a Holistic Framework to Preserve Security Architectures
Investigator: Mehdi Mirakhorli (Sole PI)
Amount: $14,800
Duration 2014-2015

G1. **RIT,** *Cyber Security Research Center, RIT competitive grants for establishing research centers.*
Investigators: Matthew Wright, Mehdi Mirakhorli
Amount: $2,100,000
Duration 2016-2023

4. Honors, Awards, And Statistics

- **Recipient of $21,148,501** (USD) to develop various software technologies in the areas of national importance.

- **Supported the Implementation of President Biden's Executive Order (EO-14028) on Improving the Nation's Cybersecurity**

- **Author of 100+** scientific publications, **H-index**: 23, **i10-index**: 48, **Citations**: 2058

- **ACM Distinguished Speaker**, 2022

- **Recipient of National Science Foundation (NSF) CAREER Award**, 2020.

- **Recipient of Kodak Endowment,** 2019

- **Best Paper Award,** IEEE International Conference on Software Architecture (ICSA) 2017.

- **ACM SIGSOFT Distinguished Paper Award**, 2012.

- **ACM SIGSOFT Distinguished Paper Award**, 2011.

- **GCCIS Outstanding Scholar Award. (2019).** B. Thomas Golisano College of Computing and Information Sciences (GCCIS), RIT.

- **Featured Faculty in RIT's Faculty Scholarship Report. (2018).** RIT.

- **President's PI Millionaires,** RIT.

- **Named as Most Active Early-Stage Software Engineering Researchers,** in Journal of Software and Systems study of Top Scholars and Institutes in Software Engineering, 2018.

- **America's Seed Fund, Subject Matter Expert.**

5. Publications

P118. Viktoria Koscinski, Mark Nelson, Ahmet Okutan, Robert Falso, Mehdi Mirakhorli, Conflicting Scores, Confusing Signals: An Empirical Study of Vulnerability Scoring Systems, The 32nd ACM Conference on Computer and Communications Security (CCS), 2025.

P117. Liliana Pasquale, Antonino Sabetta, Marcelo d'Amorim, Péter Hegedűs, Mehdi Tarrit Mirakhorli, Hamed Okhravi, Mathias Payer, Awais Rashid, Joanna CS Santos, Jonathan M Spring, Lin Tan, Katja Tuma, Challenges to using large language models in code generation and repair, IEEE Security & Privacy, 2025.

P116. Kyler Katz, Sara Moshtari, Ibrahim Mujhid, Mehdi Mirakhorli, Derek Garcia , SIExVulTS: Sensitive Information Exposure Vulnerability Detection System using Transformer Models and Static Analysis, The 19th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement, 2025.

P115. Mark Nelson, Mehdi Mirakhorli, Reimagining the Usermode Process Space by Utilizing Hardware-Enforced Sub-Process Isolation, 2025 IEEE International Conference on Cyber Security and Resilience (CSR), 2025.

P114. Fazelnia, Mohamad, Sara Moshtari, and Mehdi Mirakhorli. "Establishing Minimum Elements for Effective Vulnerability Management in AI Software." *IEEE Computer 2025*.

P113. Viktoria Koscinski and Mehdi Mirakhorli. 2024. Formally Modeled Common Weakness Enumerations (CWEs). In Proceedings of the 39th IEEE/ACM International Conference on Automated Software Engineering Workshops (ASEW '24). Association for Computing

Machinery, New York, NY, USA, 88–93. https://doi.org/10.1145/3691621.3694938

P112. Casey, Beatrice, Joanna Santos, and Mehdi Mirakhorli. "A Large-Scale Exploit Instrumentation Study of AI/ML Supply Chain Attacks in Hugging Face Models." arXiv preprint arXiv:2410.04490 (2024).

P111. Joanna C. S. Santos, Mehdi Mirakhorli, and Ali Shokri. 2024. Seneca: Taint-Based Call Graph Construction for Java Object Deserialization. Proc. ACM Program. Lang. 8, OOPSLA, Article 134 (April 2024), 29 pages. https://doi.org/10.1145/3649851 (**OOPSLA**)

P110. Mohamad Fazelnia, Viktoria Koscinski, Spencer Herzog and Mehdi Mirakhorli, "Exploring the Effectiveness of Large Language Models (LLMs) in Requirement Engineering", 32nd IEEE International Requirements Engineering 2024 conference (**RE'24**).

P109. Hamid Bagheri, Mehdi Mirakhorli, Mohamad Fazelnia, Ibrahim Mujhid, and Md Rashedul Hasan. 2024. Neuro-Symbolic Approach to Certified Scientific Software Synthesis. In Proceedings of the 1st ACM International Conference on AI-Powered Software (**AIware** 2024). Association for Computing Machinery, New York, NY, USA, 147–150. https://doi.org/10.1145/3664646.3664776

P108. Mohamad Fazelnia, Mehdi Mirakhorli, Hamid Bagheri, "Translation Titans, Reasoning Challenges: Satisfiability-Aided Language Models for Detecting Conflicting Requirements", The New Ideas and Emerging Results (NIER) Track, 39th IEEE/ACM International Conference on Automated Software Engineering (**ASE** 2024).

P107. Viktoria Koscinski and Mehdi Mirakhorli, "Formally Modeled Common Weakness Enumerations (CWEs)", 6th International Workshop on Automated and verifiable Software sYstem Development (**ASYDE**), 39th IEEE/ACM International Conference on Automated Software Engineering (ASE 2024).

P106. Joanna Santos, Mehdi Mirakhorli, Ali Shokri, Sound Call Graph Construction for Java Object Deserialization, https://arxiv.org/pdf/2311.00943.pdf

P105. Joshua Garcia, Mehdi Mirakhorli, Lu Xiao, Sam Malek, Rick Kazman, Yuanfang Cai, Nenad Medvidovic, "SAIN: A Community-Wide Software Architecture INfrastructure," 2023 IEEE/ACM 45th International Conference on Software Engineering: Companion Proceedings (**ICSE-Companion**), Melbourne, Australia, 2023, pp. 336-337, doi: 10.1109/ICSE-Companion58688.2023.00095.

P104. Mehdi Mirakhorli, Schuyler Dillon, Kevin Laporte, Matthew Morrison, Henry Lu, Derek Garcia, Matthew London, Viktoria Koscinski, Christopher Enoch, "A Landscape Study of Open Source and Proprietary Tools for Software Bill of Materials (SBOM)" , **CISA Technical Report**.

P103. Viktoria Koscinski, Sara Hashemi, Mehdi Mirakhorli, On-Demand Security Requirements Synthesis with Relational Generative Adversarial Networks (RelGAN), IEEE International Conference on Software Engineering (**ICSE 2023**).

P102. Mohamad Fazelnia, Ahmet Okutan, Mehdi Mirakhorli, Supporting AI/ML Security Workers through an Adversarial Techniques, Tools, and Common Knowledge (AI/ML ATT&CK) Framework, IEEE Security & Privacy (**S&P 2022**), To Appear. DOI:

10.1109/MSEC.2022.3221058.

P101. Sara Moshtari, Ahmet Okutan, Mehdi Mirakhorli, A Grounded Theory Based Approach to Characterize Software Attack Surfaces, IEEE International Conference on Software Engineering (**ICSE 2022**).

P100. Ahmet Okutan, Peter Mell, Mehdi Mirakhorli, Igor Khokhlov, Joanna CS Santos, Danielle Gonzalez, Steven Simmons, Empirical Validation of Automated Vulnerability Curation and Characterization, in IEEE Transactions on Software Engineering (**TSE**), vol. 49, no. 5, pp. 3241-3260, 1 May 2023, doi: 10.1109/TSE.2023.3250479

P99. Davide Taibi, Yuanfang Cai, Ingo Weber, Mehdi Mirakhorli, Michael W. Godfrey, John T. Stough & Patrizio Pelliccione , Continuous Alignment Between Software Architecture Design and Development in CI/CD Pipelines, book chapter in Software Architecture Research Roadmaps from the Community, Patrizio Pelliccione, Rick Kazman, Ingo Weber, Anna Liu (eds), Springer, October 2023.

P98. Ahmet Okutan, Ali Shokri, Viktoria Koscinski, Mohamad Fazelinia, Mehdi Mirakhorli, A Novel Approach to Identify Security Controls in Source Code. https://arxiv.org/abs/2307.05605

P97. Joanna Cecilia da Silva Santos, Xueling Zhang, Mehdi Mirakhorli, Counterfeit-Object Oriented Programming Vulnerabilities: An Empirical Study in Java, International Workshop on Mining Software Repositories Applications for Privacy and Security (**MSR4P&S@ESEC/FSE**), 2022.

P96. Joanna Cecilia da Silva Santos, Selma Suloglu, Nestor Catano and Mehdi Mirakhorli, A Methodological Approach to Verify Architecture Resiliency, 2nd International Workshop on Designing and Measuring Security in Software Architectures (**DeMeSSA**) co-located with ECSA 2022.

P95. Ahmet Okutan, Mehdi Mirakhorli, Predicting the Severity and Exploitability of Vulnerability Reports using Convolutional Neural Nets, 2022 IEEE/ACM 3rd International Workshop on Engineering and Cybersecurity of Critical Systems (**EnCyCriS 2022**).

P94. Igor Khokhlov, Ahmet Okutan, Ryan Bryla, Steven Simmons and Mehdi Mirakhorli, Automated Extraction of Software Names from Vulnerability Reports using LSTM and Expert System, 29th Annual IEEE Software Technology Conference (**STC** 2022).

P93. Mohamad Fazelnia, Igor Khokhlov, Mehdi Mirakhorli: Attacks, Defenses, And Tools: A Framework To Facilitate Robust AI/ML Systems. RobustML Workshop (**ICLR 2021**).

P92. Danielle Gonzalez, Paola Peralta Perez, and Mehdi Mirakhorli, Barriers to Shift-Left Security: The Unique Pain Points of Writing Automated Tests Involving Security Controls. In Proceedings of the 15th ACM / IEEE International Symposium on Empirical Software Engineering and Measurement (**ESEM '21**). Association for Computing Machinery, New York, NY, USA, Article 11, 1–12.

P91. Viktoria Koscinski, Celeste Gambardella, Estey Gerstner, Mark Zappavigna, Jennifer Cassetti, Mehdi Mirakhorli, A Natural Language Processing Technique for Formalization of Systems Requirement Specifications, 2021 IEEE 29th International Requirements Engineering

Conference Workshops (**REW 2021**)

P90. Ali Shokri, Joanna Cecilia da Silva Santos and Mehdi Mirakhorli, ArCode: Facilitating the Use of ApplicationFrameworks to Implement Tactics and Patterns, IEEE International Conference on Software Architecture (**ICSA 2021**).

P89. Joshua Garcia, Mehdi Mirakhorli, Lu Xiao, Yutong Zhao, Ibrahim Mujhid, Khoi Pham, Ahmet Okutan, Sam Malek, Rick Kazman, Yuanfang Cai and Nenad Medvidovic, Constructing a Shared Infrastructure for Software Architecture Analysis and Maintenance, IEEE International Conference on Software Architecture (**ICSA 2021**).

P88. Ali Shokri, Mehdi Mirakhorli, "Arcode: A tool for supporting comprehension and implementation of architectural concerns", 2021 IEEE/ACM 29th International Conference on Program Comprehension (**ICPC**), https://arxiv.org/pdf/2103.06735

P87. Joanna C. S. Santos, Reese A. Jones, Chinomso Ashiogwu, and Mehdi Mirakhorli. 2021. "Serialization-aware call graph construction". In Proceedings of the 10th ACM SIGPLAN International Workshop on the State Of the Art in Program Analysis (**SOAP** 2021). Association for Computing Machinery, New York, NY, USA, 37–42. https://doi.org/10.1145/3460946.3464319

P86. Ali Shokri, Mehdi Mirakhorli, "Depres: A tool for resolving fully qualified names and their dependencies", https://arxiv.org/pdf/2108.01165

P85. Devjeet Roy, Ziyi Zhang, Maggie Ma, Venera Arnaoudova, Annibale Panichella, Sebastiano Panichella, Danielle Gonzalez, Mehdi Mirakhorli, DeepTC-Enhancer: Improving the Readability of Automatically Generated Tests, The 35th IEEE/ACM International Conference on Automated Software Engineering (**ASE 2020**).

P84. Joanna CS Santos, Ali Shokri, Mehdi Mirakhorli, "Towards automated evidence generation for rapid and continuous software certification", 2020 IEEE International Symposium on Software Reliability Engineering Workshops (**ISSREW**), 287-294, 2020, https://s2e-lab.github.io/preprints/issrew20-preprint.pdf

P83. Jan Keim, Angelika Kaplan, Anne Koziolek and Mehdi Mirakhorli, Does BERT understand code? - An exploratory study on the detection of architectural tactics in code, In 14th European Conference on Software Architecture (**ECSA 2020**).

P82. Jan Keim, Angelika Kaplan, Anne Koziolek, Mehdi Mirakhorli, "Using BERT for the detection of architectural tactics in code", KIT Karlsruher Institut für Technologie, Fakultät für Informatik, 2020.

P81. S. Moshtari, J. C. S. Santos, M. Mirakhorli and A. Okutan, "Looking for Software Defects? First Find the Nonconformists," *2020 IEEE 20th International Working Conference on Source Code Analysis and Manipulation (SCAM 2020)*, Adelaide, Australia, 2020, pp. 75-86, doi: 10.1109/SCAM51674.2020.00014.

P80. Joanna CS Santos, Reese A Jones, Mehdi Mirakhorli, "Salsa: static analysis of serialization features", Proceedings of the 22nd ACM SIGPLAN International Workshop on Formal Techniques for Java-Like Programs, 2020.

P79. Joanna Santos, Selma Suloglu, Joanna Ye, Mehdi Mirakhorli, Towards an Automated Approach for Detecting Architectural Weaknesses in Critical Systems, The 1st International Workshop on Engineering and Cybersecurity of Critical Systems (**EnCyCriS 2020**), 2020.

P78. Joanna Santos, Sara Moshtari and Mehdi Mirakhorli, An Automated Approach to Recover the Use-case View of an Architecture, 2020 IEEE International Conference on Software Architecture Companion (**ICSA 2020**), Salvador, Brazil, 2020, pp. 63-66, doi: 10.1109/ICSA-C50368.2020.00020.

P77. Mehdi Mirakhorli, Matthias Galster, and Laurie Williams. 2020. "Understanding Software Security from Design to Deployment". SIGSOFT Softw. Eng. Notes 45, 2 (April 2020), 25–26. https://doi.org/10.1145/3385678.3385687

P76. Joanna Cecilia da Silva Santos, Reese Jones and Mehdi Mirakhorli, Static Analysis of Serialization Features, Formal Techniques for Java-like Programs, 22nd Workshop on Formal Techniques for Java-like Programs (**FTfJP 2020**).

P75. Danielle Gonzalez, Michael Rath, Mehdi Mirakhorli, "Did You Remember To Test Your Tokens?" , The International Conference on Mining Software Repositories (**MSR'20**), 2020.

P74. Joanna Cecilia Da Silva Santos, Adriana Sejfia, Taylor Corrello, Smruthi Gadenkanahalli and Mehdi Mirakhorli, Achilles' Heel of Plug-and-Play Software Architectures, 27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (**ESEC/FSE'19**), 2019.

P73. Danielle Gonzalez, Holly Hastings, Mehdi Mirakhorli, "Automated Characterization of Software Vulnerabilities", 2019 IEEE International Conference on Software Maintenance and Evolution (**ICSME'19**), short paper, 2019.

P72. Danielle Gonzalez, Fawaz Alhenaki and Mehdi Mirakhorli, Architectural Security Weaknesses in Industrial Control Systems (ICS): An Empirical Study based on Disclosed Software Vulnerabilities, IEEE International Conference on Software Architecture **(ICSA'19),** 2019.

P71. Joanna C. S. Santos, Katy Tarrit, Mehdi Mirahkorli, Matthias Galster, and Adriana Sejfia, "Tactical Vulnerabilities: An Empirical Investigation of Chromium, PHP and Thunderbird", *Journal of Systems and Software – Elsevier*, Impact factor 2.278, 2019.

P70. Waleed Zogaan, Ibrahim Mujhid, Joanna C. S. Santos, Danielle Gonzalez, Mehdi Mirakhorli, "Automated Training-Set Creation for Software Architecture Traceability Problem", *Empirical Software Engineering Journal*. Impact factor 4, 2017.

P69. Danielle Gonzalez, Joanna CS Santos, Andrew Popovich, Mehdi Mirakhorli, Mei Nagappan, "A large-scale study on the usage of testing patterns that address maintainability attributes: patterns for ease of modification, diagnoses, and comprehension", 2017 IEEE/ACM 14th International Conference on Mining Software Repositories (MSR), https://arxiv.org/pdf/1704.08412.pdf

P68. Ibrahim Mujhid, Joanna C. S. Santos, Raghuram Gopalakrishnan, Mehdi Mirakhorli, "A Search Engine for Finding and Reusing Architecturally Significant Code", *Journal of Systems and Software – Elsevier*, 2016.

P67. Mehdi Mirakhorli, Jane Cleland-Huang, "Tracing and Visualizing Architectural Tactics in Code", *IEEE Transaction on Software Engineering (TSE),* 2016.

P66. Negar Hariri, Carlos Castro-Herrera, Mehdi Mirakhorli, Jane Cleland-Huang, Bamshad Mobasher, "Supporting Domain Analysis through Mining and Recommending Features from Online Product Listings", *IEEE Transaction on Software Engineering (TSE),* 2013, vol. 99, no. PrePrints, p.1, DOI: http://doi.ieeecomputersociety.org/10.1109/TSE.2013.39.

P65. Mehdi Mirakhorli, Jane Cleland-Huang, "Traversing the Twin Peaks", *IEEE Software*, vol.30, no.2, pp.30-36, March-April 2013, DOI: 10.1109/MS.2013.40.

P64. Jane Cleland Huang, Adam Czauderna, Mehdi Mirakhorli, "Driving Architectural Design and Preservation from a Persona Perspective in Agile Projects", *Agile Software Architecture*, edited by Muhammad Ali Babar, Ivan Mistrik, and Alan Brown, 2014.

P63. Mehdi Mirakhorli and Jane Cleland-Huang. "Tracing Non-Functional Requirements", In: Andrea Zisman, Jane Cleland-Huang and Olly Gotel. *Software and Systems Traceability*, Springer-Verlag, 2012.

P62. Inayat Rehman, Mehdi Mirakhorli, Meiyappan Nagappan, Azat Aralbay Uulu, and Matthew Thornton. 2018. Roles and impacts of hands-on software architects in five industrial case studies. In Proceedings of the 40th International Conference on Software Engineering (**ICSE '18**). Association for Computing Machinery, New York, NY, USA, 117–127. https://doi.org/10.1145/3180155.3180234

P61. Matthias Galster, Danny Weyns, Antony Tang, Rick Kazman and Mehdi Mirakhorli, From Craft to Science: The Road Ahead for Empirical Software Engineering Research, International Conference on Software Engineering (**ICSE**), **NIER track**, 2018.

P60. Yuzhan Ma, Venera Arnaoudova, Mehdi Mirakhorli, Sarah Fakhoury, Mike Christensen and Waleed Zogaan, Automatic Classification of Software Artifacts in Open-Source Applications, The International Conference on Mining Software Repositories (**MSR'18**), 2018

P59. Raghuram Gopalakrishnan, Palak Sharma, Mehdi Mirakhorli and Matthias Galster, "Can Latent Topics in Source Code Predict Missing Architectural Tactics?", 39th International Conference on Software Engineering (**ICSE'17**), Buenos Aires, Argentina, 2017.

P58. Joanna C. S. Santos, Mehdi Mirahkorli, Anthony Peruma, Jairo Veloz Vidal, and Matthias Galster, Adriana Sejfia, "Understanding Software Vulnerabilities Related to Architectural Security Tactics: An Empirical Investigation of Chromium, PHP and Thunderbird", The International Conference on Software Architecture (**ICSA'17**) **(Best Paper Award)**.

P57. Joanna C. S. Santos, Katy Tarrit, Mehdi Mirakhorli, "A Catalog of Security Architecture Weaknesses", In 2017 IEEE International Conference on Software Architecture (**ICSA'17**), 2017.

P56. Waleed Zogaan, Palak Sharma, Mehdi Mirakhorli and Venera Arnaoudova, Datasets from Fifteen Years of Automated Software Traceability Research (Current State, Characteristics and Quality). 25th IEEE International Requirements Engineering Conference (**RE'17**), 2017.

P55. Hector Valdecantos, Mehdi Mirakhorli, Katy Tarrit, James O. Coplien, "An empirical study on

code comprehension: Data Context Interaction compared to classical Object Oriented" 25th International Conference on Program Comprehension (**ICPC'17**), 2017.

P54. Danielle Gonzalez, Joanna C.S. Santos, Andrew Popovich, Mehdi Mirakhorli and Mei Nagappan, "An Empirical Study of Unit Test Quality Attributes in Open Source Projects", The 14th International Conference on Mining Software Repositories (**MSR'17**), 2017.

P53. Joanna C. S. Santos, Mehdi Mirakhorli, Ibrahim Mujhid and Waleed Zogaan, "BUDGET: a Tool for Supporting Software Architecture Traceability Research", 13th Working IEEE/IFIP Conference on Software Architecture (**WICSA'16**), Tool Demonstration, 2016.

P52. Daniel Krutz, Mehdi Mirakhorli, "Architectural Clones: Toward Tactical Code Reuse", Symposium on Applied Computing, 2016.

P51. Saeed Namdar, Mehdi Mirakhorli,"Toward Actionable Software Architecture Traceability", The 8th International Symposium on Software and Systems Traceability (**SST'15**), 2015.

P50. Ehsan Kouroshfar, Mehdi Mirakhorli, Hamid Bagheri, Lu Xiao, Sam Malek, and Yuanfang Cai, "A Study on the Role of Software Architecture in the Evolution and Quality of Software", The 12th Working Conference on Mining Software Repositories (**MSR'15**), 2015.

P49. Daniel E. Krutz, Mehdi Mirakhorli, Samuel A. Malachowsky, Andres Ruiz, Jacob Peterson, and Andrew Filipski, "A Dataset of Open Source Android Applications", The 12th Working Conference on Mining Software Repositories (**MSR'15**), 2015.

P48. Mehdi Mirakhorli, Jane Cleland-Huang, "Modifications, Tweaks, and Bug Fixes in Architectural Tactics", The 12th Working Conference on Mining Software Repositories (**MSR'15**), 2015.

P47. Mehdi Mirakhorli, "Software Architecture Reconstruction: Why? What? How?", 2015 IEEE 22nd International Conference on Software Analysis, Evolution, and Reengineering (**SANER'15**), 2015

P46. Meiyappan Nagappan, Mehdi Mirakhorli: Big(ger) Data in Software Engineering. ICSE (2) 2015: 957-958.

P45. Matthias Galster, Mehdi Mirakhorli, M. Galster and M. Mirakhorli, "5th International Workshop on the Twin Peaks of Requirements and Architecture (TwinPeaks 2015)," *2015 IEEE/ACM 37th IEEE International Conference on Software Engineering*, Florence, Italy, 2015, pp. 1017-1018, doi: 10.1109/ICSE.2015.330.

P44. Robert S. Hanmer , Mehdi Mirakhorli, "Mining New Patterns by Learning from the Trenches", Pattern Languages of Programs (PLoP'14), 2014.

P43. Matthias Galster, Mehdi Mirakhorli, Jane Cleland-Huang, Xavier Franch, Janet E. Burge, Roshanak Roshandel, and Paris Avgeriou. 2014. Towards bridging the twin peaks of requirements and architecture. SIGSOFT Softw. Eng. Notes 39, 5 (September 2014), 30–31. https://doi.org/10.1145/2659118.2659139

P42. Mehdi Mirakhorli, Ahmed Fakhry, Artem Grechko, Mateusz Wieloch, Jane Cleland-Huang "Archie: A Tool for Detecting, Monitoring, and Preserving Architecturally Significant Code", 22nd ACM SIGSOFT International Symposium on the Foundations of Software Engineering

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(**FSE'14**), 2014.

P41. Mona Rahimi, Mehdi Mirakhorli, Jane Cleland-Huang, "Automated Extraction and Visualization of Quality Concerns from Requirements Specifications", 22nd IEEE International Requirements Engineering Conference (**RE'14**), 2014, IEEE Computer Society.

P40. Mehdi Mirakhorli, Yonghee Shin, Jane Cleland-Huang and Murat Cinar, "A Tactic-Centric Approach for Automating Traceability of Quality Concerns", 34th International Conference on Software Engineering (**ICSE'12**), 2012 , pp.639-649, DOI: 10.1109/ICSE.2012.6227153, **ACM SIGSOFT Distinguished Paper Award**, (Acceptance rate: 14%).

P39. Mehdi Mirakhorli, Patrick Maeder, Jane Cleland-Huang, "Variability Points and Design Pattern Usage in Architectural Tactics", 20th ACM SIGSOFT Symposium on the Foundations of Software Engineering (**FSE'12**), SIGSOFT/FSE'12, 2012, DOI=10.1145/2393596.2393657 (Acceptance rate: 17.4%).

P38. Jane Cleland-Huang, Patrick Maeder, Mehdi Mirakhorli, Sorawit Amornborvornwong, "Breaking the Big-Bang Practice of Traceability: Pushing Timely Trace Recommendations to Project Stakeholders", 20th IEEE International Requirements Engineering Conference (**RE'12**), 2012, IEEE Computer Society, pp.231-240, DOI: 10.1109/RE.2012.6345809, (Acceptance rate: 24%).

P37. Mehdi Mirakhorli, "Preventing Erosion of Architectural Tactics through Their Strategic Implementation, Preservation, and Visualization", 28th IEEE/ACM International Conference on Automated Software Engineering (**ASE'13**), 2013, pp.762-765.

P36. Matthias Galster, Mehdi Mirakhorli, Jane Cleland-Huang, Janet E. Burge, Xavier Franch, Roshanak Roshandel, Paris Avgeriou: Views on software engineering from the twin peaks of requirements and architecture. ACM SIGSOFT Software Engineering Notes 38(5): 40-42 (2013).

P35. Horatiu Dumitru, Marek Gibiec, Negar Hariri, Jane Cleland-Huang, Bamshad Mobasher, Carlos Castro-Herrera, Mehdi Mirakhorli, "On-demand Feature Recommendations derived from Mining Public Product Descriptions", IEEE International Conference on Software Engineering (**ICSE'11**), 2001, pp.81-190, DOI=10.1145/1985793.1985819, **ACM SIGSOFT Distinguished Paper Award**, (Acceptance rate: 14%).

P34. Mehdi Mirakhorli, Cleland-Huang, "Using Tactic Traceability Information Models to Reduce the Risk of Architectural Degradation during System Maintenance", Proceedings of the 27th International Conference on Software Maintenance (**ICSM'11**), 2011, pp.123-132, DOI: 10.1109/ICSM.2011.6080779, (Acceptance rate: 28%).

P33. Mehdi Mirakhorli, Jane Cleland-Huang, "Tracing Architectural Concerns in High Assurance Systems (**NIER Track**)", In Proceedings of the 33rd International Conference on Software Engineering (**ICSE'11**), 2011, pp. 908-911, DOI=10.1145/1985793.1985942, (Acceptance rate: 22%).

P32. Mehdi Mirakhorli, "Tracing Architecturally Significant Requirements: a Decision-Centric Approach", In Proceedings of the 33rd International Conference on Software

Engineering (**ICSE '11**), 2011, pp.1126-1127, DOI=10.1145/1985793.1986014.

P31.   Mehdi Mirakhorli, Cleland-Huang, "A Pattern System for Tracing Architectural Concerns", In proceeding of 18th Conference on Pattern Languages of Programs (**PLOP'10**), Portland, OR, USA. 2010.

P30.   Amir Sharifloo, Mehdi Mirakhorli, Fereidoon Shams, "Agility in Iran: Position, Motivation, and Adaption", In Proceeding of 20th Australian Conference on Software Engineering (**AWEC'09**), 2009, (Acceptance rate: 30%).

P29.   Mehdi Mirakhorli, A.R. Khanipoor, Fereidoon Shams, Abbas Mirakhorli, Maryam Pazoki, "RDP Technique: Take a Different Look at XP for Adoption", 19th IEEE Australian Conference on Software Engineering (**AWEC'09**), 2008, pp. 656-662, DOI: 10.1109/ASWEC.2008.4483259, (Acceptance rate: 30%).

P28.   Mehdi Mirakhorli, Amir Azim Sharifloo, Maghsoud Abbaspour, "A Novel Method for Leader Election Algorithm", 7th IEEE International Conference on Computer and Information Technology(**CIT'07**), 2007, pp.452,456, DOI: 10.1109/CIT.2007.86.

P27.   Amir Sharifloo, Mehdi Mirakhorli, Mostafa Esmaeili, Abolfazl T. Haghighat, "A Leader Election Algorithm for Clustered Group", IEEE International Conference on Industrial and Information System (**ICIIS2007**), 2007, DOI: 10.1109/ICIINFS.2007.4579138.

P26.   Mehran Mozafari Kermani, Mehdi Mirakhorli, "Multidisciplinary Approaches and Challenges in Integrating Emerging Medical Devices Security Research and Education", ASEE Conferences: American Society for Engineering Education (ASEE), 2016.

P25.   Scott Hawker, Robert Kuehl, Mehdi Mirakhorli, Merged Software Requirements and Architecture Course, ASEE Conferences: American Society for Engineering Education (ASEE), 2016.

P24.   Jane Cleland Huang, Muhammad Ali Babar, Mehdi Mirakhorli, "An Inverted Classroom Experience: Engaging Students in Architectural Thinking for Agile Projects", *Software Engineering Education and Training (SEET) Track*, 36th International Conference on Software Engineering (ICSE), 2014.

P23.   Joanna Cecilia Da Silva Santos, Selma Suloglu, Joanna Ye, Mehdi Mirakhorli, "Towards an Automated Approach for Detecting Architectural Weaknesses in Critical Systems" International Workshop on Engineering and Cybersecurity of Critical Systems (**EnCyCriS'20**), 2020.

P22.   Danielle Gonzalez; Suzanne Prentice; Mehdi Mirakhorli, A Fine-Grained Approach for Automated Conversion of JUnit Assertions to English, 1st International Workshop on NLP for Software Engineering, co-located with 2018 ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), 2018.

P21.   Danielle Gonzalez, Andrew Popovich, Mehdi Mirakhorli, TestEX: A Search Tool for Finding and Retrieving Example Unit Tests from Open Source Projects, 2016 IEEE 27th International Symposium on Software Reliability Engineering Workshops (ISSREW 2016).

P20.   J. Cleland-Huang, M. Rahimi and M. Mirakhorli, "Ready-Set-Transfer! Technology transfer in

the requirements engineering domain," 2015 IEEE 23rd International Requirements Engineering Conference (RE), Ottawa, ON, 2015, pp. 412-413. doi: 10.1109/RE.2015.7320461

P19. Matthias Galster, Mehdi Mirakhorli, and Nenad Medvidovic. 2017. Bringing Architecture Thinking into Developers' Daily Activities. SIGSOFT Softw. Eng. Notes 41, 6 (January 2017), 24-26. DOI: https://doi.org/10.1145/3011286.3011290.

P18. Mehdi Mirakhorli, Hongmei Chen and Rick Kazman. "Mining Big Data for Detecting, Extracting and Recommending Architectural Design Concepts", 1st International Workshop on BIG Data Software Engineering, 2015.

P17. Catherine Ramirez, Meiyappan Nagappan, and Mehdi Mirakhorli, "Studying the Impact of Evolution in R Libraries on Software Engineering Research", 1st International Workshop on Software Analytics, 2015 IEEE 22nd International Conference on Software Analysis, Evolution, and Reengineering (SANER), 2015.

P16. Mehdi Mirakhorli, "Software architecture reconstruction: Why? What? How?," *2015 IEEE 22nd International Conference on Software Analysis, Evolution, and Reengineering (SANER)*, Montreal, QC, Canada, 2015, pp. 595-595, doi: 10.1109/SANER.2015.7081885.

P15. Matthias Galster, Mehdi Mirakhorli, Anne Koziolek: Twin Peaks goes Agile. ACM SIGSOFT Software Engineering Notes 40(5): 47-49 (2015).

P14. Mehdi Mirakhorli, Julia Carvalho, Jane Cleland-Huang, Patrick Maeder, "A Domain-Centric Approach for Recommending Architectural Tactics to Satisfy Quality Concerns", *3rd International Workshop on the Twin Peaks of Requirements and Architecture (TwinPeaks),* 21st IEEE International Requirements Engineering Conference (RE'13), 2013, pp.1-8, DOI: 10.1109/TwinPeaks-2.2013.6617352.

P13. Jane Cleland-Huang, Mehdi Mirakhorli, Adam Czauderna, Mateusz Wieloch, "Decision-Centric Traceabil-ity of Architectural Concerns", The 7th International Workshop on Traceability in Emerging Forms of Software Engineering (TEFSE), Co-located with IEEE International Conference on Software Engineering (ICSE) 2013, pp.5-11, DOI: 10.1109/TEFSE.2013.6620147.

P12. J. Cleland-Huang, R. S. Hanmer, S. Supakkul and M. Mirakhorli, "The Twin Peaks of Requirements and Architecture," in *IEEE Software*, vol. 30, no. 2, pp. 24-29, March-April 2013.

P11. Mehdi Mirakhorli, Jane Cleland-Huang , "Transforming Trace Information in Architectural Documents into Re-Usable and Effective Traceability Links", *in Proceedings of the Sixth Workshop on SHAring and Reusing architectural Knowledge*, 33rd International Conference on Software Engineering (ICSE'11), 2011, pp.908-911, DOI=10.1145/1988676.1988685.

P10. Mehdi Mirakhorli, Jane Cleland-Huang, "A Decision-Centric Approach for Tracing Reliability Concerns in Embedded Software Systems", *In Proceeding of Embedded Software Reliability (ESR)*, held at ISSRE'10, San Jose, Nov, 2010.

P9. Mehdi Mirakhorli, Abdorrahman Khanipour Rad, Fereidoon Shams, Maryam Pazoki, and Abbas Mirakhorli, "RDP Technique: a Practice to Customize XP", In *Proceedings of the 2008 international workshop on Scrutinizing agile practices or shoot-out at the agile corral* (APOS

'08), 30th International Conference on Software Engineering (ICSE'08), 2008, pp. 23-32. DOI=10.1145/1370143.1370149.

P8. Mehdi Mirakhorli, Amir Azim Sharifloo, and Fereidoon Shams, "Architectural Challenges of Ultra Large Scale Systems", In *Proceedings of the 2nd international workshop on Ultra-large-scale software-intensive systems (ULSSIS '08)*, 30th International Conference on Software Engineering (ICSE'08), 2008,pp.45-48. DOI=10.1145/1370700.1370713.

P7. Amir Azim Sharifloo, Mehdi Mirakhorli, and Fereidoon Shams, "How could ULS Systems Achieve Architecture Benefits?", In *Proceedings of the 2nd international workshop on Ultra-large-scale software-intensive systems (ULSSIS '08)*, 30th International Conference on Software Engineering (ICSE'08), 2008, pp.41-44. DOI=10.1145/1370700.1370712.

P6. Fereidoon Shams, Amir Azim Sharifloo, Mehdi Mirakhorli, and Mostafa Emaeli, "A Service Driven Development Process (SDDP) Model for Ultra Large Scale Systems", In *Proceedings of the 2nd international workshop on Ultra-large-scale software-intensive systems (ULSSIS'08),* 30th International Conference on Software Engineering (ICSE'08), 2008, pp.37-40. DOI=10.1145/1370700.1370711.

P5. Gastón Márquez, Mehdi Mirakhorli, Hernán Astudillo, "Reverse Engineering Microserves-based Software Architectures" Technical Report.

P4. PhD Dissertation: "Preventing Erosion of Architectural Tactics through their Strategic Implementation, Preservation, and Visualization".

P3. M.S. Dissertation: "Reliability Prediction of Software Product Line Architecture".

P2. M.S. Seminar, "Architectural Challenges of Ultra-Large-Scale (ULS) Systems".

P1. B.Sc. Dissertation: "Performance Optimization in Building Ultra Large Data Warehouses".

Software Tools

All my open source software can be found at: https://github.com/SoftwareDesignLab

6. Public Speaking, Communication, & Selected Speeches

T32. Delivered technical briefings to the **Members of the U.S. Congress** and senior executives, effectively communicating complex software and cybersecurity issues (Several occasions).

T31. Invited speaker at cybersecurity and software engineering conferences with audiences including legal professionals.

T30. **Speaker**, Hack the Capitol, Washington D.C. 2024

T29. **Invited Speaker,** "Is It Time to Shift from Cybersecurity to Cyber Resilience?", Université Bretagne Sud, ENSIBS / IRISA, France, 2024

T28. **Distinguished Guest Speaker,** "Secure by Design", Center for Cyber Security/AI Research University of North Dakota, 2024

T27. **Annual Dr. N.H. Paul Chung Memorial Lecture:** What will Artificial Intelligence Mean for Hawaii? Opportunities for Growth, Dangers of Disinformation, and Challenges for the Workplace, ThinkTech Hawaii.

T26. **Keynote speaker:** "Secure by Design, and Default", DeMeSSA 2023 : The 3rd International Workshop on Designing and Measuring Security in Software Architectures.

T25. **Keynote speaker:** "Tool Sharing, Composition, and Reproducible Research through Software Architecture INstrument (SAIN)", 2nd International Workshop on Mining Software Repositories for Software Architecture, 2022.

T24. Lecturer series, University of Notre Dame, "Secure by Design, What it means, what it takes?", 2020.

T23. **Keynote speaker** at RePa 2017, "Deus ex machina: Reinventing by machine learning", 2017.

T22. *US Food and Drug Administration (FDA),* "Proactive Approach to Software Security, Privacy and Safety", October 2016.

T21. International Workshop on Engineering and Cybersecurity of Critical Systems (EnCyCriS 2022)

T20. *Requirements Engineering Conference (2014)*

T19. *Software Engineering Institute (SEI) Architecture Technology User Network (SATURN) Conference*, "Identifying and Protecting Architecturally Significant Code", May 2014.

T18. *ALTA Distinguished Speaker*, Alcatel-Lucent, "Software Archeology: Mining Software Repositories to Discover Design Knowledge", August 15, 2013.

T17. 40th International Conference on Software Engineering (ICSE '18)

T16. 39th International Conference on Software Engineering (ICSE'17)

T15. 8th International Symposium on Software and Systems Traceability (SST'15)

T14. The 12th Working Conference on Mining Software Repositories (MSR'15), 2015

T13. International Conference on Software Analysis, Evolution, and Reengineering (SANER'15), 2015

T12. International Conference on Software Engineering (ICSE '15), 2015

T11. Pattern Languages of Programs (PLoP'14), 2014

T10. International Symposium on the Foundations of Software Engineering (FSE'14), 2014

T9. IEEE International Requirements Engineering Conference (**RE'14**), 2014

T8. Foundation of Software Engineering Conference (FSE 2012)

T7. IEEE International Conference on Software Engineering (ICSE'11)

T6.	27th International Conference on Software Maintenance (ICSM'11)
T5.	Sixth Workshop on SHAring and Reusing architectural Knowledge, 2011
T4.	Embedded Software Reliability (ESR), 2010
T3.	18th Conference on Pattern Languages of Programs (PLOP'10)
T2.	International workshop on Scrutinizing agile practices or shoot-out at the agile corral (APOS '08)
T1.	2nd international workshop on Ultra-large-scale software-intensive systems (ULSSIS '08)

7. International Scientific Services: Leadership Roles

S24.	*Associate Editor for IEEE Transaction on Software Engineering (TSE)*
S23.	*Associate Editor, Empirical Software Engineering Journal (EMSE)*
S22.	*Editorial Board for Journal of Software and System (JSS)*
S21.	*Associate Editor for IEEE Software Blog on Software Architecture and Requirements.*
S20.	*Guest Editor, IEEE Special Issue on TwinPeaks of Requirements and Architecture*
S19.	*Program Co-Chair: Technical Briefings and Tutorials, IEEE International Conference on Software Architecture (ICSA), 2024*
S18.	*Program Chair: 3rd International Workshop on Software Security from Design to Deployment.*
S17.	*Publicity Chair: International Working Conference on Requirements Engineering: Foundation for Software Quality, 2019.*
S16.	*Program Chair: International Workshop on Software Security from Design to Deployment, Co-located with ASE 2019.*
S15.	*Program Co-Chair: The Second International Workshop on Establishing a Community-Wide Infrastructure for Architecture-Based Software Engineering, Co-located with ICSE 2019.*
S14.	*Data Track Chair: International Requirements Engineering Conference (RE), 2017.*
S13.	*Program Chair: International Workshop on Software Security from Design to Deployment, Co-located with ICSE 2018.*
S12.	*Program Co-Chair: The First International Workshop on Establishing a Community-Wide Infrastructure for Architecture-Based Software Engineering, Co-located with ICSE 2017.*
S11.	*Workshops Chair, FSE 2016: ACM SIGSOFT International Symposium on the Foundations of Software Engineering.*
S10.	*General Chair, First International Workshop on Bringing Architecture Design Thinking into Developers' Daily Activities (Bridge'16), 2016.*
S9.	*Program Committee Chair, 5th International Workshop on Twin Peaks of Requirements and*

Architecture, IEEE International Conference on Software Engineering (ICSE), 2015.

S8. *Program Chair: Technical Briefing on Big(ger) Data in Software Engineering, IEEE International Conference on Software Engineering (ICSE), 2015.*

S7. *Speaker, Software Architecture Reconstruction: Why? What? and How?, 22nd International Conference on Software Analysis, Evolution and Reengineering (SANER), 2015.*

S6. *Co-Organizer, Focused Group on Mining New Patterns, Pattern Languages of Programs (PLoP), 2014.*

S5. *Program Chair: 4th International Workshop on Twin Peaks of Requirements and Architecture, IEEE International Conference on Software Engineering (ICSE), 2014.*

S4. *Program Board Member: 3rd International Workshop on Twin Peaks of Requirements and Architecture, 21st IEEE International Requirements Engineering Conference (RE), 2013.*

S3. *Program Board Member: 2nd International Workshop on Twin Peaks of Requirements and Architecture IEEE International Conference on Software Engineering (ICSE), 2013.*

S2. *Program Chair: 1st International Workshop on Twin Peaks of Requirements and Architecture, 20st IEEE International Requirements Engineering Conference (RE'12), 2012.*

S1. *Student Volunteer Chair, 20th IEEE International Requirements Engineering Conference, September 24th-28th, 2012.*

8. International Scientific Services: Program Committees

S37. *International Requirements Engineering Conference (RE), 2025.*

S36. *MSR4P&S 2025: 3rd International Workshop on Mining Software Repositories Applications for Privacy and Security 2025, IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER) 2025.*

S35. *IEEE International Conference on Software Engineering (ICSE 2020).*

S34. *ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2020).*

S33. *IEEE International Conference on Automated Software Engineering (ASE 2020).*

S32. *IEEE International Conference on Requirements Engineering (RE 2020).*

S31. *The International Conference on Mining Software Repositories (MSR 2020).*

S30. *IEEE European Conference on Software Architecture (ECSA 2020).*

S29. *IEEE International Conference on Software Architectures (ICSA 2020).*

S28. *IEEE International Conference on Software Maintenance and Evolution (ICSME 2020).*

S27. *IEEE International Conference on Software Architectures (ICSA), Early Career Researchers Forum (ECRF) (ICSA-ECRF 2020).*

S26. *IEEE International Conference on Software Architectures (ICSA 2019).*

S25. *Tool Demonstrations, ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2019).*

S24. *European Conference on Software Architecture (ECSA 2019).*

S23. *IEEE International Conference on Automated Software Engineering (ASE 2018).*

S22. *IEEE International Conference on Software Architectures (ICSA 2018).*

S21. *Tool Demonstration Track at the International Conference on Software Engineering (ICSE 2018).*

S20. *IEEE International Conference on Software Maintenance and Evolution (ICSME 2018).*

S19. *IEEE International Conference on Requirements Engineering (RE 2018).*

S18. *International Symposium on Software Testing and Analysis (ISSTA) 2018 Demonstrations Track, 2018.*

S17. *European Conference on Software Architecture (ECSA 2018).*

S16. *IEEE International Conference on Software Architectures (ICSA 2017).*

S15. *23rd International Working Conference on Requirements Engineering: Foundation for Software Quality, 2017.*

S14. *Tool Demonstration Track at the International Conference on Software Engineering (ICSE 2016).*

S13. *Tool Demonstration Track at 31st IEEE/ACM International Conference on Automated Software Engineering (ASE 2016).*

S12. *Eighth International Workshop on Managing Technical Debt, 2016.*

S11. *Software Engineering Education Track at the International Conference on Software Engineering (ICSE 2016).*

S10. *2nd International Workshop on BIG Data Software Engineering, ICSE 2016.*

S9. *8th International Symposium on Software and Systems Traceability (SST' 2015).*

S8. *22nd International Conference on Software Analysis, Evolution and Reengineering (SANER 2015).*

S7. *Early Research Achievements (ERA) track of the 30th International Conference on Software Maintenance and Evolution (ICSME 2015).*

S6. *RE2015-Posters-Tool-Demos, International Requirements Engineering Conference (RE), 2015.*

S5. *1st International Workshop on BIG Data Software Engineering, IEEE International Conference on Software Engineering (ICSE), 2015.*

S4. *Early Research Achievements (ERA) track of the 30th International Conference on Software Maintenance and Evolution (ICSME 2014).*

S3. *Pattern Shepherd, Pattern Languages of Programs Conference (PLoP'13), October 23-26, 2013.*

S2. *7th International Workshop on Traceability in Emerging Forms of Software Engineering. Collocated with IEEE International Conference on Software Engineering (ICSE'13), 2013.*

S1. *Requirements Engineering for Systems, Services, and Systems of Systems (RES^4) at 19th IEEE International Requirements Engineering Conference (RE'10), 2010.*

9. Service to the Profession: Federal & State Agencies

S4. *Evaluator, SME for National Science Foundation (NSF), U.S. Department of Homeland Security (DHS), U.S. Department of Defense (DoD), several occasions*

S3. *R&D Evaluator for European Institutes, Several occasions.*

S2. *R&D Evaluator for U.S. Institutes/States, Several occasions*

S1. *Natural Sciences and Engineering Research Council of Canada, Expert Reviewer, Several occasions*

10. Service Activities within the University

S17. *Hiring Committee Chair, ICS, University of Hawaii at Manoa, 2023, 2024*

S16. *Dean's Hiring Committee, Thomas Golisano College of Computing and Information Sciences (GCCIS). 2022*

S15. *Hiring Committee Chair, Software Engineering Department.*

S14. *Establishing DFARS Compliance Facility at Software Design and Productivity Laboratory.*

S13. *New Funding Model for PhD Program, Ad-hoc Committee, Rochester Institute of Technology, 2019.*

S12. *Hiring Committee, Director of Research Computing*

S11. *PhD Curriculum Committee, Rochester Institute of Technology, 2017, 2018.*

S10. *Graduate Curriculum Committee, Software Engineering Department Rochester Institute of Technology, 2017, 2018, 2019, 2020.*

S9. *Tenure-Track Hiring Committee Member, Rochester Institute of Technology, 2017.*

S8. *Tenure-Track Hiring Committee Member, Rochester Institute of Technology, 2016.*

S7. *Tenure-Track Hiring Committee Member, Rochester Institute of Technology, 2015.*

S6. *Graduate Admission Committee Member, Rochester Institute of Technology, 2014-2016.*

S5. *ABET Accreditation Committee, Software Engineering Department, Rochester Institute of Technology, 2015.*

S4.   *Lecturer Hiring Committee Member, Rochester Institute of Technology, 2015.*

S3.   *Reviewer for College-Wide Seed Grants, Rochester Institute of Technology, 2014.*

S2.   *CO-OP Advisor, Rochester Institute of Technology, 2014-Present.*

S1.   *Open Houses, Rochester Institute of Technology, 2014-Present.*

11. Research Advisees

Full-Time Research Staff:
- Dr. Selma Suloglu
- Dr. Igor Khokhlov
- Dr. Nestor Catano
- Dr. Ahmet Okutan
- Dr. Sara Moshtari
- Estey Gerstner
- Ibrahim Mujhid
- Chris Enoch
- Matthew Moon
- Tyler Drake
- Ping Liu

Current Ph.D. Students
- Derek Garcia (2024-Present), AI & Cybersecurity
- Mohamad Fazelnia (2020-Present), AI & Cybersecurity
- Viktoria Koscinski (2020-Present), Software Security

Former Ph.D. Students
- Sarah Moshtari, Postdoctoral Researcher, University of Hawaii, 2023.
- Ali Shokri, Postdoctoral Researcher, Virginia Tech, 2023.
- Joanna Cecilia Santos, 2021, Assistant Professor, **University of Notre Dame**, U.S. News Ranke 20.
- Danielle Gonzalez, 2021, **Recipient of Microsoft Research Fellowship, Security Researcher at Microsoft.**
- Waleed Zogaan, 2019, Assistant Professor, Jazan University

Visiting Ph.D. Students
- Gaston Marquez, (2018-Present), Federico Santa Maria Technical University, Chile
- Keim, Jan, (2019-Present), Karlsruhe Institute of Technology (KIT), Germany
- Andréa Cristina de Souza Doreste (2019-Present), Universidade Federal do Rio de Janeiro, Brazil
- Michael Rath (2019-Present), Technische Universität Ilmenau, Germany

Committee Member

- Harold Valdivia Garcia, Ph.D., RIT, 2016
- Bushra Aloraini, Ph.D., RIT. 2017
- Eman Abdullah Alomar, RIT, 2019
- Hussein Al-Rubaye, Ph.D., RIT, 2020
- Katja Tuma, Gothenburg University, Sweden, 2021

Master and Undergraduate Research Advisees

1. Jake Imanaka
2. Adriana Sejfia
3. Samantha Reed
4. Ali Shokri
5. Amol Pantvaidya
6. Andrew Popovich
7. Anthony Peruma
8. Austin Sierra
9. Azat Aralbay Uulu
10. Carlos Gabriel
11. Cesar Perez
12. Chinmay Singh
13. Danielle Gonzalez
14. Nasir Ahmad Safdari
15. Omar Dajani
16. Palak Sharma
17. Palash Sanjay Jain
18. Pratham Mehta
19. Pritesh Bora
20. Priyank Kapadia
21. Chinmay Singh
22. Ryan Bryla
23. Jasmin Gomez Heredia
24. Emily Lederman
25. Nomso Ashiogwu
26. Schuyler Dillon
27. Derek Garcia
28. Juliette Raubolt
29. Fawaz Alhenaki
30. Joanna Ye
31. Hitesh Ulhas Vaidya
32. Reese Jones
33. Celeste Gambardella
34. Paola Peralta Perez
35. Pavan Chappidi
36. Brandon Greet
37. Peter Mastropaolo
38. Garcia-Dubus Mejia
39. Giovana PucciniÂa
40. Hector Valdecantos
41. Heena Farhat Surve
42. Holly Hastings
43. Ibrahim Mujhid
44. Inayat Rehman
45. Jairo Pavel Veloz Vidal
46. Jeffrey Miller
47. Joanna Santos
48. Jodie Miu
49. Joe Tom Job
50. John Rivera
51. Ishika Prasad
52. Harrison Klein
53. Mugdha Sudhakar
54. Raghuram Gopalakrishnan
55. Rahul Kumar Shinde
56. Rebaz Saber Sale
57. Ronak Shettigar
58. Shreya Ramesh Kothari
59. Smruthi Gadenkanahalli
60. Steven Simmon
61. Suzanne Prentice
62. Talal Alsarrani
63. Taylor Corrello
64. Tegan Ayers
65. Tejal Vishnoi
66. Umang Garg
67. Waleed Zogaan
68. Wendy Hsia
69. Adonias Landa
70. David Rickards
71. Jared Ebenstein
72. Kelly Trainor
73. Michael Pacheco
74. Manya Kaur Gulati
75. Andrew Pickard
76. Matthew Thornton
77. Viral Parmar

12. Teaching Experience and Curriculum Design

Curricular Development at University of Hawaii:
- Advanced Software Engineering, Fall 2023.
- Capstones, Spring 2024

Curricular Development at Rochester Institute of Technology:
- Software Modeling (RIT), Fall 2014.
- Software Requirements and Architecture, Fall 2014, Spring 2016, Spring 2017, Spring 2018.
- Software Architecture and Product line, Fall 2015, Fall 2016, Fall 2017, Fall 2018.

- Software Architecture, Fall 2019, Fall 2020.
- Independent Studies, Spring 2015, Fall 2016, Spring 2017, Fall 2017, Spring 2018, Fall 2018.
- Software Engineering for Startups, Spring 2019

As Lecturer at Iran University of Science and Technology (Behshahr Campus):
- Software Engineering Principles, Fall 2008, Fall 2009
- Compiler Construction, Fall 2008, Spring 2009
- Object Oriented Software Development, Fall 2008
- C++ Programming Language, Spring 2008, Spring 2009
- Software Architecture, Spring 2008, Fall 2009
- Advanced Topic in Software Engineering, Spring 2008, Spring 2009

13. Expert Witness & Litigation Consulting

L.1. REDAX AI, ENS Africa
Retaining Party: REDAX AI
Counsel: ENS Africa
Nature of Case: Patent Office Action Response – USPTO
Role: Patent Analysis, Expert Affidavit on Examiner Reports, Prior Art Analysis
Period: July 2025 – Present

L.2. Confidential Engagement – Fortune 500 Technology Firms
Counsel: Irell & Manella LLP ("I&M")
Nature of the case: Patent infringement, cybersecurity and distributed data processing, Jan 2025-Present.
Role: Technical Expert Consultant – Patent Infringement and Litigation

L.3. Confidential Engagement
Counsel: Baker & McKenzie LLP
Nature of the case: Contract Dispute, August 2025-Present
Role: Technical Expert Consultant

L.4. EVER.AG, LLC v. MILK MOOVEMENT, INC., A FOREIGN CORPORATION
Retaining party: EVER.AG ("Dairy")
Counsel: WILLKIE, FARR & GALLAGHER, LLP.
Jurisdiction: United States District Court for the Eastern District of
California Nature of suit: Trade Secret Misappropriation
Case No.: 2:21-cv-02233-
WBS-AC May 2023 – 2024
Role: Software Expert Witness

L.5. UNITED MERCHANT SERVICES, INC. and BLUU, INC. Plaintiff, v. ROYAL WESTERN COMPUTER, INC.; JONG S. LIM; TOMORROW POS INC.
Retaining party: ROYAL WESTERN COMPUTER, INC.; TOMORROW POS INC.
Counsel: Kim, Lim & Partners

Jurisdiction: United States District Court for the District of New Jersey Nature of suit: Trade Secret and Copyright Infringement
Case No.: 2:22-cv-04791
May 2024 – Present
Role: Software Expert Witness.

L.6. JK SOFT, INC. v. INNOAS, INC. et al

Retaining party: JKSOFT, INC., Counsel: Kim, Cho & Lim, LLC
Jurisdiction: United States District Court, District Of New Jersey Nature of suit: Commercial Crime– Theft
Case No.: 2:2018cv00199
February 2022 – 2023
Role: Software Expert Witness

L.7. Arrow Electronics, Inc. ("Arrow") and the United States Fire Insurance Company ("U.S. Fire") v. Alleged Arrow Employee

Retaining party: Arrow Electronics, Inc. ("Arrow")
Counsel: Clark Hill, PLC
Nature of Case: Insurance Claim – Theft February 2022 – May 2022
Role: Litigation Consultant

L.8. Confidential Consulting

U.S. Department of Defense Office of Inspector General (DoD OIG) vs. Private Organization

Retained Party: Private Organization. Participated Under Non-Disclosure Agreement with the U.S. Government, and OIG
Nature of Case: Discovery, Cybersecurity Investigation, 2020-2021
Role: Litigation Consultant, Evidence Discovery to Refute Claims
Outcome: Case closed, No further action by OIG, no legal action by DOJ.

L.9. Confidential Consulting

U.S. Department of Homeland Security (DHS) & Private Corp.

Prime and Subcontractor dispute, Discovery, 2017
Role: Software Expert Witness

14. Professional Memberships

- Association for Computing Machinery, ACM
- ACM Special Interest Group in Software Engineering (SIGSOFT)
- Institute of Electrical and
- Electronics Engineers (IEEE)