

Joanna C. S. Santos

ASSISTANT PROFESSOR
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
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RESEARCH INTERESTS

I work at the intersection of **Security** and **Software Engineering**. My main research interests are:

Secure-by-Design Software Engineering: studying real world vulnerabilities to understand how architectural design decisions influence software security.

Program Analysis and Vulnerability Detection: developing scalable program analysis techniques to identify vulnerabilities in complex software systems.

Trustworthy AI-Assisted Software Engineering: examining the reliability of existing AI assistants used in software engineering workflows and building AI-based approaches for secure code generation, vulnerability repair, and vulnerability testing.

AI/ML Software Supply Chain Security: studying security risks across AI and machine learning (ML) ecosystems, including untrusted model serialization, and insecure model configurations.

Quantum-Enabled Software Security Analysis: exploring the power of quantum computing to scale vulnerability detection, exploit synthesis, and data tampering detection beyond classical capabilities.

EDUCATION

Ph.D. in Computing and Information Sciences Aug. 2016 – July 2021
Rochester Institute of Technology (RIT) Rochester, NY. USA

Dissertation: *Understanding and Identifying Vulnerabilities Related to Architectural Security Tactics*
Advisor: Dr. Mehdi Mirakhorli

M.Sc. in Software Engineering Aug. 2014 – May 2016
Rochester Institute of Technology (RIT) Rochester, NY. USA

Thesis: *Toward Establishing a Catalog of Security Architecture Weaknesses*
Advisor: Dr. Mehdi Mirakhorli

B.Sc. in Computer Engineering Jan. 2009 – Oct. 2013
Federal University of Sergipe (UFS) São Cristóvão, SE. Brazil

Undergraduate Thesis: *JOnline: An Online Judge for Teaching Programming*
Advisor: Dr. Admilson R. L. Ribeiro

PROFESSIONAL EXPERIENCE

Assistant Professor Aug. 2021 – Present
Department of Computer Science and Engineering, University of Notre Dame (ND) Notre Dame, IN. USA

Systems Analyst Jan. 2014 – Aug. 2014
Assessoria e Consultoria Empresarial LTDA (ACONE) Aracaju, SE. Brazil

HONORS & AWARDS



Distinguished Reviewer Award at the ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2023)
In recognition of outstanding work done throughout the review process.



Research Pitch Competition at JOBS Workshop 2020
Won Research Pitch competition at JOBS Workshop (co-located with 53rd IEEE/ACM International Symposium on Microarchitecture - MICRO 2020).



Best Paper Award at the International Conference on Software Architecture (ICSA 2017)
Award to the paper “*Understanding Software Vulnerabilities Related to Architectural Security Tactics: An Empirical Investigation of Chromium, PHP and Thunderbird*”



Science Without Borders Scholarship
Scholarship granted by CAPES (Coordination for the Improvement of Higher Education Personnel) to pursue a masters degree at RIT (2014-2016).



Published paper ranked at 3rd place at the Workshop on Undergraduate Research and Scientific Initiation Projects (WTICG 2013)
Award to the paper “*A Location Service using the HTML5 Geolocation API. (Original title: “Serviço de localização utilizando a API de geolocalização do HTML5”)* published at the Workshop on Undergraduate Research and Scientific Initiation Projects (WTICG 2013) co-located with the 13th Regional School of Computing of the States of Bahia, Alagoas and Sergipe (ERBASE 2013).

GRANTS AND FUNDING

Total Funding: \$4.33 million; **Dr Santos’ lab total:** \$1.08 million

G6 Q-DART: A Quantum-Based Framework for Real-Time Data Tampering Detection

Period: May 2026 – May 2027.

Prime Sponsor: NSF/IUCRC Center for Quantum Technologies (CQT).

Amount: US\$ 50,186.

Role: sole PI.

G5 Next-Generation Vulnerability Detection: Leveraging Cognitive Insights from Expert Hackers

Period: Sep. 2025 – Aug. 2028.

Prime Sponsor: Advanced Research Projects Agency for Health (ARPA-H).

Total Award: US\$ 4,000,000 (ND’s share: US\$ 750,000).

Role: Sole PI at ND.

Collaborating Institutions and Contributions:

- **University of Notre Dame:** Design and development of a novel hacker-inspired static analysis framework for detecting injection vulnerabilities.
- **Northeastern University:** Development of fuzzing techniques targeting memory management vulnerabilities.
- **PQSecure:** Detection and analysis of cryptographic vulnerabilities.
- **Hawksbill:** Development of a portable cognitive modeling environment to capture and operationalize expert hacker mental models.

G4 Context-Aware Secure Code Generation using Large Language Models

Period: September 2025 – August 2027.

Prime Sponsor: Naughton Faculty Research Accelerator Program.

Amount: U\$ 120,000.
Role: PI (Co-PI: Dr. Liliana Pasquale, University College Dublin).
Collaborating Institutions and Contributions:

- **University College Dublin:** Empirically study the role of different contextual elements, specially those at the level of requirements and design, in effective secure code generation.
- **University of Notre Dame:** Development of a a novel context-aware secure code generation framework.

G3 TITAN: QuanTum Adversarial AtTack DetectionN

Period: May 2025 – May 2026
Prime Sponsor: NSF/IUCRC Center for Quantum Technologies (CQT).
Amount: U\$ 51,111.
Role: Sole PI.

G2 Leveraging the Power of LLMs to Generate Security Tests for Mobile Apps

Period: April 2024 – April 2025
Prime Sponsor: Google (Research Scholar Program).
Amount: U\$60,000.00.
Role: sole PI.

G1 Quantum-Enabled Software Exploit Synthesis to Detect Object Injection Vulnerabilities

Period: May 2024 – May 2025
Prime Sponsor: NSF/IUCRC Center for Quantum Technologies (CQT).
Amount: U\$ 52,651.
Role: sole PI.

PUBLICATIONS

- Advisees are denoted follows: ^(*) for undergraduate students, ^(@) for graduate students, and ⁽⁺⁾ for postdoctoral fellows.
- Impact factors reflect the journal’s score at the time each article was published. For manuscripts under review, the impact factor listed is the one at the time of submission.
- Conference acceptance rates are not available for papers under review or upcoming submissions.

Summary of Google Scholar citation indices (as of May 2026):

	All	Since 2021
Citations	1,834	1,711
h-index	18	18
i10-index	30	27

JOURNAL ARTICLES

[J8]
ASE Journal

M. L. Siddiq^(@), N. Ulfat^(*), N. Raihan, **J. C. S. Santos**, M. Zampieri. “Multi-Sallm: A Multilingual Security Assessment of Generated Code”. *Automated Software Engineering Journal*. (Submitted: Sep. 2025, Major Revision Decision: Jan. 2026, Major Revision Submission: Mar. 2026, Minor Revision Decision: May 2026. Minor Revision Submission: Jun. 2026. Accepted: Jul. 2026.).
{Impact Factor: 3.1}

[J7]
TIFS 2025

E. Abdukhamidov, T. Abuhmed, **J. C. S. Santos** and M. Abuhamad. “AdvChar: Attacking Interpretable NLP Systems”. In: *IEEE Transactions on Information Forensics & Security – TIFS*. (Submitted: Nov. 2024, Major Revision Decision: May 2025. Minor Revisions: Aug. 2025. Accepted: Oct. 2025).{Impact Factor: 8}

- [J6]
JIIS 2025 N. Raihan, D. Goswami, S. S. C. Puspo, M. L. Siddiq^(*), C. Newman, T. Ranasinghe, **J. C. S. Santos**, M. Zampieri. “On the Performance of Large Language Models on Introductory Programming Assignments”. In: *Journal of Intelligent Information Systems – JIIS* (Submitted: Oct. 2024, Major Revision Decision: Feb. 2025. Accepted: July 2025). **{Impact Factor: 2.5}**
- [J5]
ACM CSUR 2024 B. Casey^(*), **J. C. S. Santos**, G. Perry^(*). “A Survey of Source Code Representations for Machine Learning-Based Cybersecurity Tasks”. In: *ACM Computing Surveys*. (Submitted: Mar. 2024, Major Revision Decision: Jul. 2024, Submitted for Major Revision: Oct. 2022. Submitted for Minor Revision: Feb. 2024. Accepted: Feb 2024). **{Impact Factor: 23.8}**
- [J4]
TSE 2023 A. Okutan, P. Mell, M. Mirakhorli, I. Khokhlov, **J. C. S. Santos**, D. Gonzalez, and S. Simmons. “Empirical Validation of Automated Vulnerability Curation and Characterization”. In: *IEEE Transactions on Software Engineering (TSE)*. (Submitted: Oct. 2021, Major Revision Decision: May 2022, Submitted for Major Revision: Aug 2022. Submitted for Minor Revision: Jan. 2023. Accepted: Feb 2023). **{Impact Factor: 9.322}**
- [J3]
JSS 2019 **J. C. S. Santos**, K. Tarrit, A. Sejfia, M. Mirakhorli, and M. Galster. “An empirical study of tactical vulnerabilities”. *Journal of Systems and Software*. Vol. 149, pp. 263–284. (Received Oct. 2017, Revised Sep. 2018, Accepted Oct. 2018, Available online Oct. 2018.) **{Impact Factor: 3.5}**
- [J2]
JSS 2016 I. J. Mujhid, **J. C. S. Santos**, R. Gopalakrishnan, and M. Mirakhorli. “A search engine for finding and reusing architecturally significant code”. *Journal of Systems and Software (JSS)*. Vol. 130, pp. 81–93. (Received Feb. 2016, Revised Aug. 2016, Accepted Nov. 2016, Available online Nov. 2016). **{Impact Factor: 3.5}**
- [J1]
EMSE 2016 W. Zogaan, I. J. Mujhid, **J. C. S. Santos**, D. Gonzalez, and M. Mirakhorli. “Automated training-set creation for software architecture traceability problem”. *Empirical Software Engineering (EMSE)*. Vol. 22, Issue 3. pp. 1028–1062. (Received Nov. 2015, Accepted Oct. 2016, Available online Nov. 2016) **{Impact Factor: 4.1}**

CONFERENCE PAPERS

- [C26]
SAS 2026 X. Zhao^(*), **J. C. S. Santos**. “TriVul: Improving Precision of Static Vulnerability Detection through Multi-Agent Reasoning”. *33rd Static Analysis Symposium (SAS 2026)*.
- [C25]
ICSME 2026 M. L. Siddiq^(*), M. N. Rahman^(*), **J. C. S. Santos**. “An Empirical Study of Security Calibration in Large Language Models for Code”. *42nd IEEE International Conference on Software Maintenance and Evolution (ICSME 2026)*. Benevento, Italy. **{To appear}**
- [C24]
FSE 2026 F. Paixao, E. S. Almeida, **J. C. S. Santos**, P. A. M. Silveira Neto, D. Sadoc, G. B. Figueiredo. “Automated Detection of Configuration-Specific Security Vulnerabilities via Patch Analysis”. *ACM International Conference on the Foundations of Software Engineering (FSE 2026)*. **{To appear}**
- [C23]
EACL Findings 2026 N. Raihan, N. Erdachew^(*), J. Devi, **J. C. S. Santos**, M. Zampieri. “CodeGuard: Improving LLM Guardrails in CS Education”. *Findings of the 19th Conference of the European Chapter of the Association for Computational Linguistics (EACL Findings 2026)*. **{Acceptance Rate: 16.1%}**
- [C22]
SANER 2026 L. S. Oliveira, R. Bonifácio de Almeida, **J. C. S. Santos**, R. Rua. “InstruMate: A Systematic Framework for Assessing Android App Repackaging Resilience”. *33rd IEEE International Conference*

on Software Analysis, Evolution and Reengineering (SANER 2026). {📄 To appear} {Acceptance Rate: 23%}

- [C21]
MSR 2026 C. M. D. Segal, P. M. D. Segal, C. E. S. Banjar, F. Paixão, H. S. Borges, P. Silveira Neto, E. Almeida, **J. C. S. Santos**, A. Kocheturov, G. K. Srivastava, D. S. Menasche. “Characterizing and Modeling the GitHub Security Advisories Review Pipeline”. *23rd International Conference on Mining Software Repositories (MSR 2026)*. {📄 To appear}
- [C20]
NAACL Findings 2025 N. Raihan, **J. C. S. Santos**, M. Zampieri. “MojoBench: Language Modeling and Benchmarks for Mojo”. *Findings of the 2025 Annual Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics (NAACL Findings 2025)*.
- [C19]
SIGCSE 2025 N. Raihan, M. L. Siddiq[📧], **J. C. S. Santos**, M. Zampieri. “Large Language Models in Computer Science Education: A Systematic Literature Review”. *56th ACM Technical Symposium on Computer Science Education (SIGCSE 2025)*.
- [C18]
SCAM 2024 M. L. Siddiq[📧], B. Casey[📧], **J. C. S. Santos**. “FRANC: A Lightweight Framework for High-Quality Code Generation”. *24th IEEE International Conference on Source Code Analysis and Manipulation (SCAM 2024)*.
- [C17]
SCAM 2024 M. L. Siddiq[📧], **J. C. S. Santos**, S. B. Dristi^(*), J. Saha^(*). “The Fault in our Stars: Quality Assessment of Code Generation Benchmarks”. *24th IEEE International Conference on Source Code Analysis and Manipulation (SCAM 2024)*.
- [C16]
EASE 2024 M. L. Siddiq[📧], **J. C. S. Santos**, R. H. Tanvir^(*), N. Ulfat^(*), F. A. Rifat^(*), V. Lopes[📧]. “Using Large Language Models to Generate JUnit Tests: An Empirical Study”. *International Conference on Evaluation and Assessment in Software Engineering (EASE 2024)*.
- [C15]
ICPC 2024 M. L. Siddiq[📧], J. Zhang^(*), **J. C. S. Santos**. “Understanding Regular Expression Denial of Service (ReDoS): Insights from LLM-Generated Regexes and Developer Forums”. *International Conference on Program Comprehension (ICPC 2024)*.
- [C14]
OOPSLA 2024 **J. C. S. Santos**, M. Mirakhorli, A. Shokri. “Seneca: Taint-Based Call Graph Construction for Java Object Deserialization”. *International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2024)*.
- [C13]
MSR Mining Challenge 2024 M. L. Siddiq[📧], L. Roney^(*), J. Zhang^(*), **J. C. S. Santos**. “Quality Assessment of ChatGPT Generated Code and their Use by Developers”. *21st International Conference on Mining Software Repositories – Mining Challenge Track (MSR-Mining Challenge 2024)*. Lisbon, Portugal.
- [C12]
ICSE NIER 2024 M. L. Siddiq[📧], J. Zhang^(*), L. Roney^(*), **J. C. S. Santos**. “Re(gEx|DoS)Eval: Evaluating Generated Regular Expressions and their Proneness to DoS Attacks”. *46th International Conference on Software Engineering New Ideas and Emerging Results (NIER) Track (ICSE-NIER 2024)*. Lisbon, Portugal.
- [C11]
SCAM 2022 M. L. Siddiq[📧], S. H. Majumder^(*), M. R. Mim^(*), S. Jajodia^(*), **J. C. S. Santos**. “An Empirical Study of Code Smells in Transformer-based Code Generation Techniques”. *22nd IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2022)*. Limassol, Cyprus. {Acceptance Rate: 27%}

- [C10]
ICSA 2021 A. Shokri, **J. C. S. Santos**, and M. Mirakhorli. “ArCode: Facilitating the use of application frameworks to implement tactics and patterns”. In: *IEEE International Conference on Software Architecture (ICSA 2021)*. {**Acceptance Rate**: 26.7%}
- [C9]
SCAM 2020 S. Moshtari, **J. C. S. Santos**, M. Mirakhorli and A. Okutan. “Looking for software defects? First find the nonconformists”. In: *2020 IEEE 20th International Working Conference on Source Code Analysis and Manipulation (SCAM 2020)*, Virtual (due to COVID-19), pp. 75–86.
- [C8]
ICSA 2020 **J. C. S. Santos**, S. Moshtari and M. Mirakhorli. “An Automated Approach to Recover the Use-case View of an Architecture”. In: *2020 IEEE International Conference on Software Architecture (ICSA 2020)*, Virtual (due to COVID-19), pp. 63–66. New and Emerging Ideas (NEMI) Track.
- [C7]
ESEC/FSE 2019 **J. C. S. Santos**, A. Sejfia, T. Corrello, S. Gadenkanahalli, and M. Mirakhorli. “Achilles’ heel of plug-and-Play software architectures: a grounded theory based approach”. In: *27th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2019)*, Tallinn, Estonia, pp. 671–682. {**Acceptance Rate**: 24.4%}
-  [C6]
ICSA 2017 **J. C. S. Santos**, A. Peruma, M. Mirakhorli, M. Galster, J. V. Vidal and A. Sejfia. “Understanding software vulnerabilities related to architectural security tactics: An empirical investigation of chromium, php and thunderbird”. In: *2017 IEEE International Conference on Software Architecture (ICSA 2017)*, Gothenburg, Sweden, pp. 69–78. **Best Paper Award** {**Acceptance Rate**: 22%}
- [C5]
MSR 2017 D. Gonzalez, **J. C. S. Santos**, A. Popovich, M. Mirakhorli and M. Nagappan. “A large-scale study on the usage of testing patterns that address maintainability attributes: Patterns for ease of modification, diagnoses, and comprehension”. In: *2017 IEEE/ACM 14th International Conference on Mining Software Repositories (MSR 2017)*, Buenos Aires, Argentina, pp. 391–401. {**Acceptance Rate**: 31%}
- [C4]
ICSA 2017 **J. C. S. Santos**, K. Tarrit and M. Mirakhorli. “A Catalog of Security Architecture Weaknesses”. In: *Proceedings of the 2017 IEEE International Conference on Software Architecture (ICSA 2017)*. Gothenburg, Sweden, pp. 220–223. (ICSA 2017 - Early Career Track).
- [C3]
WICSA 2016 **J. C. S. Santos**, M. Mirakhorli, I. Mujhid, and W. Zogaan. “BUDGET: a Tool for Supporting Software Architecture Traceability Research”. In: *Proceedings of the 13th Working IEEE/IFIP Conference on Software Architecture (WICSA 2016)*, Venice, Italy, pp. 303–306. Tool Demo.
- [C2]
ITNG 2016 F. M. Ribeiro, T. Rocha, **J. C. S. Santos**, and E. D. Moreno. “A model-driven solution for automatic software deployment in the cloud”. In: *Information Technology: New Generations (ITNG 2016)*, Las Vegas, USA, pp. 591–601. {**Acceptance Rate**: 35%}
- [C1]
EATIS 2012 A. R. Ribeiro, M. T. Chella, L. M. M. Santos, **J. C. S. Santos**, and W. R. Melo. “ERLab: a middleware for remote access electronic laboratories”. In: *Proceedings of the 6th Euro American Conference on Telematics and Information Systems (EATIS 2012)*, Valencia, Spain, pp. 199–205. {**Acceptance Rate**: Not Disclosed}

WORKSHOP PAPERS & POSTERS

- [W10]
QUASAR 2025 Casey B. , **J. C. S. Santos**, Hennessee A. . **J. C. S. Santos**. “Quantum-Based SMT Solving for String Theory”. *2nd Workshop on Quantum Algorithms, Software and Applied Research (QUASAR 2025)*. Notre Dame, IN, USA.

- [W9]
NLBSE 2023 M. L. Siddiq^(*), A. Samee^(*), S. R. Azgor^(*), M. A. Haider^(*), S. I. Sawraz^(*), **J. C. S. Santos**. “Zero-shot Prompting for Code Complexity Prediction Using GitHub Copilot”. *2nd International Workshop on Natural Language-based Software Engineering (co-located with ICSE’23)*. Melbourne, Australia.
- [W8]
MSR4P&S 2022 M. L. Siddiq^(*), **J. C. S. Santos**. “SecurityEval Dataset: Mining Vulnerability Examples to Evaluate Machine Learning-Based Code Generation Techniques”. *1st International Workshop on International Workshop on Mining Software Repositories Applications for Privacy and Security (co-located with ESEC/FSE’22)*. Singapore.
- [W7]
NLBSE 2022 M. L. Siddiq^(*), **J. C. S. Santos**. “BERT-Based GitHub Issue Report Classification”. *1st International Workshop on Natural Language-based Software Engineering (co-located with ICSE’22)*. Tool Demo. Pittsburgh, PA, USA.
- [W6]
DeMeSSA’22 **J. C. S. Santos**, S. Suloglu, N. Catano, and M. Mirakhorli. “A Methodological Approach to Verify Architecture Resiliency”. In: *2nd International Workshop on Designing and Measuring Security in Software Architecture (co-located with ECSA’22)*. Prague, Czech Republic. 2022.
- [W5]
MSR4P&S 2022 **J. C. S. Santos**, X. Zhang, M. Mirakhorli. “Counterfeit Object-Oriented Programming Vulnerabilities: An Empirical Study in Java”. *1st International Workshop on International Workshop on Mining Software Repositories Applications for Privacy and Security (co-located with ESEC/FSE’22)*. Singapore.
- [W4]
SOAP’21 **J. C. S. Santos**, R. A. Jones, C. Ashiogwu, and M. Mirakhorli. “Serialization-Aware Call Graph Construction”. In: *10th ACM SIGPLAN International Workshop on the State of the Art in Program Analysis (SOAP)*. Virtual Conference. 2021.
- [W3]
FTfJP 2020 **J. C. S. Santos**, R. A. Jones, and M. Mirakhorli. “Salsa: Static analysis of serialization features”. In: *Proceedings of the 22nd ACM SIGPLAN International Workshop on Formal Techniques for Java-Like Programs (FTfJP 2020)*, Virtual (due to COVID-19), pp.18–25.
- [W2]
EnCyCriS 2020 **J. C. S. Santos**, S. Suloglu, J. Ye, and M. Mirakhorli. “Towards an automated approach for detecting architectural weaknesses in critical systems”. In: *Proceedings of the IEEE/ACM 42nd International Conference on Software Engineering Workshops – 1st International Workshop on Engineering and Cybersecurity of Critical Systems (EnCyCriS 2020)*., Virtual (due to COVID-19), pp. 250–253.
- [W1]
WoSoCer 2020 **J. C. S. Santos**, A. Shokri, and M. Mirakhorli. “Towards Automated Evidence Generation for Rapid and Continuous Software Certification”. In: *Proceedings of the 2020 IEEE International Symposium on Software Reliability Engineering Workshops (ISSREW) – 10th IEEE International Workshop on Software Certification (WoSoCer 2020)*, Virtual (due to COVID-19), pp. 287–294.

TUTORIALS

- [T1]
ESEC/FSE 2022 **J. C. S. Santos**, Dolby, J. “Program analysis using WALA”. In: *30th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*. Singapore.

BOOK CHAPTERS

- [BC1]
2026 J. C. S. Santos. “Cyber-AI Supply Chain Vulnerabilities”. In: AI for Cybersecurity: Research and Practice, First Edition. Edited by Houbing Herbert Song et al. Published 2026 by John Wiley & Sons, Inc.

MAGAZINES

- [M1]
2025 L. Pasquale, A. Sabetta, M. d’Amorim, P. Hegedűs, M. Mirakhorli, H. Okhravi, M. Payer, A. Rashid, J. C. S. Santos, J. M. Spring, L. Tan, K. Tuma. “Challenges to Using Large Language Models in Code Generation and Repair”. IEEE Security & Privacy, vol. 23, no. 2, pp. 81-88, March-April 2025.

PAPERS IN PREPARATION

- [P4]
ICSE 2027 M. L. Siddiq^(a), T. H. Romel^(*), B. Casey^(a), N. Sekerak^(*), J. C. S. Santos. “An Empirical Study on Remote Code Execution in Machine Learning Model Hosting Ecosystems”. *49th International Conference on Software Engineering (ICSE 2027)*.
- [P3]
TOSEM B. Casey^(a), K. Damian^(*), A. Cotaj^(*), J. C. S. Santos. “Quantum Programming Languages: A systematic Literature Review”. *ACM Transactions on Software Engineering and Methodology*. {Impact Factor: 6.2}
- [P2]
IST B. Casey^(a), K. Damian^(*), A. Cotaj^(*), P. Johson^(a), J. C. S. Santos. “Idiomatic C-to-Rust translation: Are we there yet?”. *Information and Software Technology Journal*. {Impact Factor: 4.3}
- [P1]
TSE M. L. Siddiq^(a), B. Casey^(a), V. C. Lopes^(a), J. C. S. Santos. “Testing the Untrusted: An Empirical Study of Custom Model Codes in Model-Sharing Platforms”. *IEEE Transactions on Software Engineering*. {Impact Factor: 5.6}

PUBLICATIONS IN BRAZILIAN CONFERENCES AND WORKSHOPS

These publications are written in Portuguese. Original titles and venue names are shown in parentheses.

- 🏆 ERBASE 2013 J. C. S. Santos, S. C. P. Hoentsch, R. A. Nascimento, and A. R. L. Ribeiro. “A Location Service using the HTML5 Geolocation API. (Serviço de localização utilizando a API de geolocalização do HTML5)”. In: *13th Regional School of Computing of the States of Bahia, Alagoas and Sergipe - Scientific Initiation and Undergraduate Works Workshop (XIII Escola Regional de Computação dos Estados da Bahia, Alagoas e Sergipe - Workshop de Trabalhos de IC e de Graduação - ERBASE 2013 - WTICG)*. Aracaju, Brazil. pp. 60–69. **Paper ranked in 3rd place.**
- ERBASE 2012 S. C. P. Hoentsch, A. R. L. Ribeiro, J. C. S. Santos, L. L. B. Menezes. “A Mobile Social Network Approach for Research and Education. (Uma Proposta de Site de Rede Social Móvel para Pesquisa e Educação)”. In: *12th Regional School of Computing of the States of Bahia, Alagoas and Sergipe - 10th Workshop on Education and Informatics Bahia-Alagoas-Sergipe (XII Escola Regional de*

Computação dos Estados da Bahia, Alagoas e Sergipe - X Workshop de Educação e Informática Bahia, Alagoas, e Sergipe - ERBASE 2012 - X WEIBASE). Juazeiro, Brazil. pp. 26–33.

SBIE 2011 **J. C. S. Santos** and A. R. L. Ribeiro. “JOnline: a preliminary approach of an online judge for teaching computer programming. (JOnline: Proposta preliminar de um juiz online didático para o ensino de programação)”. In: *22nd Brazilian Symposium on Computers in Education (Simpósio Brasileiro de Informática na Educação-SBIE)*. Aracaju, Brazil. pp. 964–967.

ENINED 2011 **J. C. S. Santos** and A. R. L. Ribeiro (2011). “An online judge approach for teaching computer programming. (Uma proposta de um juiz online didático para o ensino de programação)”. In *2nd National Meeting on Informatics and Education (II Encontro Nacional de Informática e Educação - ENINED)*. Cascavel, Brazil. pp. 332–341.

ENINED 2011 A. R. Ribeiro, M. T. Chella, L. M. M. Santos, **J. C. S. Santos**, and W. R. Melo. “LEW: Web Engineering Laboratory for teaching, research and extension. (LEW: Laboratório de Engenharia Web para ensino, pesquisa e extensão)”. *2nd National Meeting on Informatics and Education (II Encontro Nacional de Informática e Educação - ENINED)*. Cascavel, Brazil. pp. 359–368.

ENINED 2011 S. C. P. Hoentsch, A. R. L. Ribeiro, and **J. C. S. Santos**. “SocialNetLab - A Social Networking Site for Education. (SocialNetLab - Uma Proposta de Site de Rede Social para Educação)”. In: *2nd National Meeting on Informatics and Education (II Encontro Nacional de Informática e Educação - ENINED)*. Cascavel, Brazil. pp. 77–84.

TEACHING EXPERIENCE

Course Instructor ND - University of Notre Dame	Aug. 2021 – Present Notre Dame, IN. USA
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Courses:

CSE30332: Programming Paradigms (Fall 2021, Fall 2022, Spring 2024, Spring 2025, Spring 2026)

CSE60770/40770: Secure Software Engineering (Spring 2022, Spring 2023, Fall 2023, Fall 2024, Fall 2025)

Course Instructor Softeam - Empresa Júnior de Informática da UFS Course: <i>An Introduction to Java</i> (Total Duration: 48hrs)	Session 1: May 2012 – Aug. 2012, Session 2: Nov. 2012 – Apr. 2013 São Cristóvão, SE. Brazil
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Course Instructor CAFIS - Centro Acadêmico de Física da UFS Course: <i>An Introduction to C++</i> (Total Duration: 20hrs)	Oct. 2011 – Dec. 2011 São Cristóvão, SE. Brazil
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Teaching Assistant UFS - Federal University of Sergipe Courses: <i>COMP0197: Imperative programming</i> (Spring 2010, Spring 2011) <i>COMP0198: Object-oriented programming</i> (Fall 2010, Fall 2011)	Jan. 2010 – Dec. 2011 São Cristóvão, SE. Brazil
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GUEST LECTURES AT RIT

SWEN-440: Software System Requirements and Architecture Engineering

› **Lectures:** Introduction to Requirements and Architecture Engineering. Architecturally Significant Requirements. Security Architecture Design. Threat Modeling. Security Patterns. Usecase Modeling.

SWEN-610: Introduction to Software Engineering

› **Lectures:** Research in Software Engineering.

SWEN-755: Software Architecture and Product Lines

› **Lectures:** Requirements Specification. Google Chromium Architecture. Failure Detection and Recovery. Secure by Design.

INTERNSHIP EXPERIENCE

Intern Software Developer

ACONE - Assessoria e Consultoria Empresarial LTDA

Apr. 2013 – Oct. 2013

Aracaju, SE. Brazil

Intern in Informatics

MPF/SE - Office of Federal Prosecution in Sergipe

May 2012 – Apr. 2013

Aracaju, SE. Brazil

SERVICE

U.S. NATIONAL SCIENCE FOUNDATION (NSF) PANELS

- › 2022
- › 2024
- › 2025
- › 2026

SERVICE AT ND

- › CSE Graduate Admissions Committee (Aug. 2021 – Present)
- › CSE Graduate Space Task Force (Aug. 2024 – May 2025)
- › Social Media Task Force (Aug. 2022 - May 2023)
- › Search Committee for Assistant Professor of the Practice (CSE) (Jan. 2023 - May 2023)
- › Judge for the 2022 Hesburgh Libraries Hackathon (March 2022)
- › PhD Dissertation Proposal Committee Member:
 - Nov. 21st, 2025: *Student*: Ningzhi Tang. *Title*: “Fostering Human-AI Alignment in AI-Assisted Programming”. *Advisor*: Toby Li.
 - Nov. 20th, 2025: *Student*: Katherine Dearstyne. *Title*: “Bridging Software Traceability and Artificial Intelligence: Toward AI-Driven Traceability and Traceability-Supported AI Systems”. *Advisor*: Jane Cleland-Huang.
 - Nov. 6th, 2025: *Student*: Tony Alarcon. *Title*: “Towards Embedding Uncertainty into the Autonomy Stack of AI-Enabled Multi-UAV Systems for Emergency Response”. *Advisor*: Jane Cleland-Huang.
 - Apr. 29th, 2025: *Student*: Nirajan Koirala. *Title*: “Secure and Scalable Framework for Large-Scale Sensitive Workloads using Fully Homomorphic Encryption and Trusted Execution Environments”. *Advisor*: Taeho Jung.
 - Apr. 11th, 2025: *Student*: Chia-Yi Su. *Title*: “Context-based Language Models for Source Code Summarization”. *Advisor*: Collin McMillan.
 - Jan. 31st, 2025: *Student*: Theodore Chambers. *Title*: “A Software Ecosystem for Human-on-the-Loop Multi-sUAS Emergency Response”. *Advisor*: Jane Cleland-Huang.
 - Sep. 28th, 2023: *Student*: Wenyi Tang. *Title*: “Towards Secure Decentralized Trust Management of User Identity Information on the Blockchain”. *Advisor*: Taeho Jung.
 - Aug. 2nd, 2022: *Student*: Aakash Bansal. *Title*: “Improving Automatic Source Code Summarization with Additional Knowledge”. *Advisor*: Collin McMillan.
 - Apr. 26th, 2022: *Student*: Jonathan Takeshita. *Title*: “Towards Improved Integration of Homomorphic Cryptography and Trusted Hardware”. *Advisor*: Taeho Jung.

- › PhD Dissertation Committee Member:

- **Mar. 3rd, 2026:** *Student:* Wenyi Tang. *Title:* “Towards secure decentralized provenance, identity management, and their applications on blockchain”. *Advisor:* Taeho Jung.
- **Mar. 22nd, 2024.** *Student:* Aakash Bansal. *Title:* “Context-aware models for automatic source code summarization”. *Advisor:* Collin McMillan.
- **Sep. 12th, 2023.** *Student:* Jonathan Takeshita. *Title:* “Towards Improved Integration of Homomorphic Cryptography and Trusted Hardware”. *Advisor:* Taeho Jung.
- **Oct. 12th, 2021.** *Student:* Rachel Krohn. *Title:* “Dynamics of the Early Life of Online Content”. *Advisor:* Tim Weninger.

ORGANIZATION COMMITTEE

- › **Process Review Co-Chair:** 49th IEEE International Conference on Software Engineering (ICSE 2027)
- › **Co-Organizer:** 4th International Workshop on Software Vulnerability Management (SVM 2026)
- › **Co-Organizer:** 3rd International Workshop on Software Vulnerability Management (SVM 2025)
- › **Publicity Co-Chair:** 18th European Conference on Software Architecture (ECSA 2024)
- › **Tutorial Co-Chair:** 2024 ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2024)
- › **Publicity Chair:** 38th Annual ACM Symposium on Applied Computing – Requirements Engineering Track (ACM SAC RE-Track’23)

PROGRAM COMMITTEE (PC) MEMBER FOR CONFERENCES

- › **Research Track:** ACM International Conference on the Foundations of Software Engineering (FSE 2027)
- › **Research Track:** International Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA 2027)
- › **Research Track:** 48th IEEE International Conference on Software Engineering (ICSE 2026)
- › **Research Track:** 22nd International Conference on Mining Software Repositories (MSR 2025)
- › **Research Track:** Object-oriented Programming, Systems, Languages, and Applications (OOPSLA 2025)
- › **Research Track:** ACM International Conference on the Foundations of Software Engineering (FSE 2025)
- › **Research Track:** 47th IEEE International Conference on Software Engineering (ICSE 2025)
- › **Research Track:** 19th ACM ASIA Conference on Computer and Communications Security (AsiaCCS 2024)
- › **Research Track:** 21st IEEE International Conference on Software Architecture (ICSA 2024)
- › **Research Track:** 46th IEEE International Conference on Software Engineering (ICSE 2024)
- › **Research Track:** 33rd ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2024)
- › **Research Track:** 21st International Conference on Mining Software Repositories (MSR 2024)
- › **Research Track:** 20th International Conference on Mining Software Repositories (MSR 2023)
- › **Research Track:** 23rd IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2023)
- › **Research Track:** 2023 ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2023)
- › **Research Track:** 20th IEEE International Conference on Software Architecture (ICSA 2023)
- › **Tool Demos Track:** 2022 ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2022)
- › **Artifact Evaluation Track:** 37th IEEE/ACM International Conference on Automated Software Engineering (ASE 2022)

- › **Research Track:** 36th Brazilian Symposium on Software Engineering (SBES 2022)
- › **New Ideas and Emerging Results Track:** 38th IEEE International Conference on Software Maintenance and Evolution (ICSME 2022)
- › **Engineering Track:** 22nd IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2022)
- › **Workshops Track:** 30th International Requirements Engineering Conference (RE 2022)
- › **ERA Track:** 30th IEEE/ACM International Conference on Program Comprehension (ICPC 2022)
- › **Posters Track:** 44th International Conference on Software Engineering (ICSE 2022)
- › **ACM Student Research Competition:** 15th Innovations in Software Engineering Conference (ISEC 2022)
- › **Posters Track:** 19th IEEE International Conference on Software Architecture (ICSA 2022)
- › **Artifact Evaluation Track:** 36th IEEE/ACM International Conference on Automated Software Engineering (ASE 2021)
- › **Artifact Evaluation Track:** ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2021)
- › **Research Track:** 15th Brazilian Symposium on Software Components, Architectures, and Reuse (SBCARS 2021)
- › **Engineering Track:** 21st IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2021)
- › **Workshop & Tutorials Track:** 15th European Conference on Software Architecture (ECSA 2021)
- › **Shadow PC Member:** Mining Software Repositories (MSR 2021)

PROGRAM COMMITTEE (PC) MEMBER FOR WORKSHOPS / SYMPOSIUMS

- › ACM Workshop on Software Supply Chain Offensive Research and Ecosystem Defenses (SCORED 2024)
- › Mining Challenge at the 21st International Conference on Mining Software Repositories (MSR Mining Challenge 2024)
- › 7th Annual Symposium on Machine Programming (MAPS 2024)
- › 3rd International Workshop on Software Engineering and AI for Data Quality in Cyber-Physical Systems/Internet of Things (SEA4DQ 2023)
- › 1st International Workshop on Software Vulnerability Management (SVM 2023)
- › 3rd International Workshop on Software Security from Design to Deployment (SEAD 2020)
- › 2nd International Workshop on Software Security from Design to Deployment (SEAD 2019)

REVIEWER

- › Journal of Systems and Software (JSS)
- › ACM Transactions on Programming Languages and Systems (TOPLAS)
- › Journal of Data and Information Quality (JDIQ)
- › Empirical Software Engineering (EMSE)
- › IEEE Transactions on Software Engineering (TSE)
- › ACM Transactions on Software Engineering and Methodology (TOSEM)
- › Software Testing, Verification and Reliability (STVR)
- › IEEE Software (Special Issue: Diversity Crisis in Software Development - 2020)
- › (External Reviewer) 6th IEEE European Symposium on Security and Privacy (Euro S&P 2021)
- › (Sub-reviewer) 36th International Conference on Software Maintenance and Evolution (ICSME 2020)
- › (Sub-reviewer) 14th European Conference on Software Architecture (ECSA 2020)

OTHER

- › **2021:** Member of the Open Science Initiative Board for the Journal of Systems and Software (JSS).
- › **2012-2013:** Member of the Computer Engineering Collegiate Board. Computer Science Department at the Federal University of Sergipe (UFS)

STUDENT VOLUNTEER

- › 36th International Conference on Software Maintenance and Evolution (ICSME 2020)
- › 20th IEEE Int’l. Working Conference on Source Code Analysis and Manipulation (SCAM 2020)
- › International Conference on Software Engineering (ICSE 2019)
- › Brazilian Symposium on Computers in Education (SBIE 2011)

ADVISEES

POSTDOCS

Md. Nishat Raihan
Postdoc

Aug. 2026 (Upcoming)
University of Notre Dame (ND)

GRADUATE STUDENTS

Prince Noah Johnson
PhD Student

Jan. 2026 – Present
University of Notre Dame (ND)

Xinye Zhao
PhD Student

Aug. 2025 – Present
University of Notre Dame (ND)

Beatrice Casey
PhD Student

Aug. 2022 – Present
University of Notre Dame (ND)

Vinicius Carvalho Lopes
PhD Student

Jan. 2022 – Present
University of Notre Dame (ND)

Mohammed Latif Siddiq
Former PhD Student, joined Meta.

Jan. 2022 – May 2026
University of Notre Dame (ND)

Hernan Barajas
Master Student

Jan. 2026 – May 2026
University of Notre Dame (ND)

Tom O’Connor
Master Student

Jan. 2025 – Dec. 2025
University of Notre Dame (ND)

Luka Cvetko
Master Student

Jan. 2024 – May 2024
University of Notre Dame (ND)

UNDERGRADUATE STUDENTS

Matt Zampino
Undergraduate Research Assistant

Aug 2025 – present
University of Notre Dame (ND)

Christian Garcia
Undergraduate Research Assistant

Aug 2025 – present
University of Notre Dame (ND)

Evan Waelde
Undergraduate Research Assistant

Jan 2026 – present
University of Notre Dame (ND)

Anthony Tsantis
Undergraduate Research Assistant

Jan 2026 – May 2026
University of Notre Dame (ND)

Natalie Sekerak
Undergraduate Research Assistant

Aug 2025 – May 2026
University of Notre Dame (ND)

Anna Arnett <i>Undergraduate Research Assistant</i>	Aug 2025 – Dec 2025 University of Notre Dame (ND)
Sajith Devareddy <i>Undergraduate Research Assistant</i>	Jan 2024 – May 2024; Jan 2026 – Present University of Notre Dame (ND)
Andrew Cotaj <i>Undergraduate Research Assistant</i>	Aug. 2024 – Present University of Notre Dame (ND)
Kaia Damian <i>Undergraduate Research Assistant</i>	Aug. 2024 – Present University of Notre Dame (ND)
Andrew Gaylord <i>Undergraduate Research Assistant</i>	Jan. 2025 – Present University of Notre Dame (ND)
Arvin Islam-Gomes <i>Undergraduate Research Assistant</i>	Jan. 2025 – Present University of Notre Dame (ND)
Celeste Mannel <i>Undergraduate Research Assistant</i>	Jan. 2025 – Dec. 2025 University of Notre Dame (ND)
Emmanuel de La Paz <i>Undergraduate Research Assistant</i>	May 2023 – Aug. 2023; Jan. 2025 – May 2025 University of Notre Dame (ND)
Miguel Jose Maninang <i>Undergraduate Research Assistant</i>	Jan 2024 – May 2024; Jan. 2025 – Present University of Notre Dame (ND)
Neol Gutierrez <i>Undergraduate Research Assistant</i>	Jan 2024 – May 2024; Jan. 2025 – May 2025 University of Notre Dame (ND)
Antonio Karam <i>Undergraduate Research Assistant</i>	Aug. 2024 – May. 2025 University of Notre Dame (ND)
Maria C. Leal <i>Undergraduate Research Assistant</i>	Aug. 2024 – May 2025 University of Notre Dame (ND)
Aaron Afeminke <i>Undergraduate Research Assistant</i>	Jan. 2025 – May 2025 University of Notre Dame (ND)
Abby Kleist <i>Undergraduate Research Assistant</i>	Jan. 2025 – May 2025 University of Notre Dame (ND)
Jack Decker <i>Undergraduate Research Assistant</i>	Jan. 2025 – May 2025 University of Notre Dame (ND)
Leyang Li <i>Undergraduate Research Assistant</i>	Aug. 2024 – Dec. 2024 University of Notre Dame (ND)
Grace K. Odmark <i>Undergraduate Research Assistant</i>	Aug. 2024 – Dec. 2024 University of Notre Dame (ND)
Rena Steele <i>Undergraduate Research Assistant</i>	Aug. 2024 – Dec. 2024 University of Notre Dame (ND)
Varun Taneja <i>Undergraduate Research Assistant</i>	Aug. 2024 – Dec. 2024 University of Notre Dame (ND)
Matthew Spadafore <i>Undergraduate Research Assistant</i>	Jan 2024 – May 2024 University of Notre Dame (ND)
Lindsay Roney <i>Undergraduate Research Assistant</i>	Aug 2023 – May 2024 University of Notre Dame (ND)
Jiahao Zhang <i>Undergraduate Research Assistant (Visiting ND from SUSTech)</i>	Aug 2023 – Dec. 2023 University of Notre Dame (ND)
Anna Muller <i>Undergraduate Research Assistant</i>	Aug 2023 – Dec. 2023 University of Notre Dame (ND)
Dan Krill <i>Undergraduate Research Assistant</i>	Aug 2023 – Dec. 2023 University of Notre Dame (ND)
Claudia Kuczun <i>Undergraduate Research Assistant</i>	Aug 2023 – Dec. 2023 University of Notre Dame (ND)

George Perry
Undergraduate Research Assistant

Eva Gorzkiewicz
Undergraduate Research Assistant

Mark Rumsey
Undergraduate Research Assistant

Angel Ortiz
Undergraduate Research Assistant

Desereé Frink-Larcart
Undergraduate Research Assistant

Mark Cheng
Undergraduate Research Assistant

Joshua Agron
Undergraduate Research Assistant

Megan Campbell
Undergraduate Research Assistant

Aug. 2022 – Dec. 2023
University of Notre Dame (ND)

May 2023 – Nov. 2023
University of Notre Dame (ND)

May 2023 – Nov. 2023
University of Notre Dame (ND)

May 2023 – Aug. 2023
University of Notre Dame (ND)

Jan. 2023 – May 2023
University of Notre Dame (ND)

Jan. 2022 – May 2022
University of Notre Dame (ND)

Aug. 2021 – May 2022
University of Notre Dame (ND)

Aug. 2021 – Dec. 2021
University of Notre Dame (ND)

MENTORSHIP EXPERIENCE (PRIOR TO JOINING ND)

All mentees supervised in conjunction with Dr. Mehdi Mirakhorli (RIT).

* Mentorship as part of the REU site at RIT (“Cultivating Next Generation Software Engineering Researchers”).

Chinomso Ashiogwu *
Undergraduate Research Assistant

Reese A. Jones
Undergraduate Research Assistant

Joanna Ye *
Undergraduate Research Assistant

Jasmin Gomez Heredia *
Undergraduate Research Assistant

Omar Dajani *
Undergraduate Research Assistant

Wendy Hsia *
Undergraduate Research Assistant

Smruthi Gadenkanahalli
Graduate Research Assistant

Taylor Corrello
Graduate Research Assistant

Jairo Pavel Veloz Vidal
Graduate Research Assistant

May 2020 – May 2021
University of Maryland - Baltimore County (UMBC)

Dec. 2018 – Jul. 2019 // Jan. – Oct. 2020 // Jan. 2021 – May 2021
Rochester Institute of Technology (RIT)

Jun. 2019 – Oct. 2019
Rochester Institute of Technology (RIT)

Jun. 2019 – Aug. 2019
California State University - Sacramento (CSUS)

Jun. 2018 – Mar. 2019
Rochester Institute of Technology (RIT)

Jun. 2018 – Oct. 2018
Seattle University (SU)

Nov. 2017 – May. 2018
Rochester Institute of Technology (RIT)

Dec. 2017 – May. 2018
Rochester Institute of Technology (RIT)

Jan. 2016 – Jan. 2017
Rochester Institute of Technology (RIT)

INVITED TALKS, CONFERENCE PRESENTATIONS, TUTORIALS & PANELS

- › **June 4th, 2026:** Paradigms Shock Podcast. *Online*. **Podcast Interview**
- › **April 29th, 2026:** Untrusted Data Deserialization Vulnerabilities in the Age of AI/ML Software Systems. *George Mason University IST Research Seminar*. Fairfax, VA. **Invited Talk**
- › **May 7th, 2025:** How to Give a Job Talk. *Future Faculty Workshop at ND*. Notre Dame, IN. **Panel**
- › **Dec 13th, 2024:** Evaluating Generated Regular Expressions and their Proneness to Denial of Service Attacks. *RIT ESL Global Cybersecurity Institute Seminar*. Rochester, NY. **Invited Talk**

- › **October 23rd, 2024:** Seneca: Taint-Based Call Graph Construction for Java Object Deserialization. *Object-Oriented Programming, Systems, Languages & Applications (OOPSLA 2024)*. Pasadena, CA. **Conference Presentation**
- › **May 7th, 2024:** How to Give a Job Talk. *Future Faculty Workshop at ND*. Notre Dame, IN. **Panel**
- › **May 2nd, 2024:** Exploring the Susceptibility of LLM-Generated Regexes to Denial of Service (DoS) Attacks. *Greater Chicago Area Systems Research Workshop (GCASR 2024)*. Chicago, IL. **Invited Talk**
- › **March 27th, 2024:** Understanding and Evaluating Generated Regular Expressions and their Proneness to Denial-of-Service (DoS) Attacks. *Weekly Academic Seminar. Federal University of Sergipe (UFS)*. Virtual. **Invited Talk**
- › **September 30th, 2023:** Exploring the Effectiveness of Large Language Models in Generating Unit Tests. *Progra-Maria Summit 2023*. Virtual. **Invited Talk** ▶ <https://youtu.be/hq4rMt9jTfs>
- › **November 18th, 2022:** Counterfeit-Object Oriented Programming Vulnerabilities: An Empirical Study in Java. *1st International Workshop on Mining Software Repositories Applications for Privacy and Security (MSR4P&S @ ESEC/FSE 2022)*. Virtual. **Conference Presentation**
- › **November 17th, 2022:** Program Analysis using WALA. *ESEC/FSE 2022*. Singapore. **Tutorial**
- › **November 1st, 2022:** (In)Secure by Design: Challenges in Engineering Secure Software Systems. *ECE Seminar. Purdue University*. West Lafayette, IN. **Invited Talk** ▶ <https://engineering.purdue.edu/ECECompSeminar/wp-content/uploads/2022/11/joanna-11-xx.mp4>
- › **October 4th, 2022:** Research in Software Engineering at Academia, Industry, Brazil and/or abroad: revealing the possible ways to achieve success. *2nd Latin American School on Software Engineering*. Virtual. **Panel** ▶ <https://youtu.be/tFLSqGSEAjM>
- › **September 23rd, 2022:** Choose wisely: code smells in automatically generated code. *It Will Never Work in Theory (co-located with the Strange Loop 2022 conference)*. St. Louis, MO. **Invited Talk**
- › **June 23rd, 2022:** Challenges in Engineering Secure Software Systems. *Applied Computing Seminar at the National Institute for Space Research (INPE)*. Virtual. **Invited Talk** ▶ <https://youtu.be/DVBCKBXyqj0>
- › **May 31st, 2022:** BERT-Based GitHub Issue Report Classification. *Weekly Academic Seminar. Federal University of Sergipe (UFS)*. Virtual. **Invited Talk**
- › **April 28th, 2022:** Preparing for Faculty Interviews. *Women and gender minorities in Computing Club (WinCC) from the University of Southern California (USC)*. Virtual. **Panel**
- › **November 24th, 2021:** Frontiers of Software Engineering. *Online*. **Podcast Interview** ▶ <https://youtu.be/ARbKH3jLEcY>
- › **November 16th, 2021:** Engineering (In)Secure Software Systems. *Federal Institute of Parana (IFPR - Paranavaí Campi)*. Virtual. **Invited Talk**
- › **October 19th, 2021:** Emílias Podcast. *Online*. **Podcast Interview** ▶ <https://youtu.be/5SWp7QGsvEY>
- › **October 18th, 2021:** (In)Secure by Design. *Indiana Statewide Cybersecurity Summit*. Virtual. **Invited Talk** ▶ https://youtu.be/dL7yJwE_ts8
- › **October 15th, 2021:** Achilles' Heel of Plug-and-Play Software Architectures: A Grounded Theory Based Approach. *Federal University of Sergipe (UFS)*. Virtual. **Invited Talk**
- › **September 30th, 2021:** Secure by Design. *12th Brazilian Conference on Software: Practice and Theory (CBSOFT 2021)*. Virtual. **Invited Tutorial**
- › **June 22nd, 2021:** Serialization-Aware Call Graph Construction. *10th ACM SIGPLAN International Workshop on the State of the Art in Program Analysis (SOAP @ PLDI 2021)*. Virtual. **Conference Presentation**
- › **May 28th, 2021:** Serialization-Aware Call Graph Construction. *Weekly Academic Seminar. Federal University of Sergipe (UFS)*. Virtual. **Invited Talk**
- › **November 4th, 2020:** An Automated Approach to Recover the Use-case View of an Architecture. *2020 IEEE International Conference on Software Architecture - New and Emerging Ideas (NEMI Track @ ICSA 2020)*. Virtual. **Conference Presentation**

- › **October 12th, 2020:** Towards Automated Evidence Generation for Rapid and Continuous Software Certification. *10th IEEE International Workshop on Software Certification (WoSoCer @ ISSRE 2020)*. Virtual. **Conference Presentation**
- › **July 23rd, 2020:** Salsa: Static Analysis of Serialization Features. *Formal Techniques for Java-like Programs (FTfJP @ ECOOP 2020)*. Virtual. **Conference Presentation**
- › **June 30th, 2020:** Towards an Automated Approach for Detecting Architectural Weaknesses in Critical Systems. *1st International Workshop on Engineering and Cybersecurity of Critical Systems (EnCyCriS @ ICSE 2020)*. Virtual. **Conference Presentation**
- › **August 29th, 2019:** Achilles' Heel of Plug-and-Play Software Architectures: A Grounded Theory Based Approach. *27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2019)*. Tallinn, Estonia. **Conference Presentation**
- › **June 28th, 2019:** Challenges faced in graduate school and how I overcame them. *2019 REU Graduate Study and Research Symposium. Rochester Institute of Technology (RIT)*. Rochester, NY. **Panel**
- › **June 22nd, 2018:** Challenges faced in graduate school and how I overcame them. *2018 REU Graduate Study and Research Symposium. Rochester Institute of Technology (RIT)*. Rochester, NY. **Panel**
- › **April 5th, 2017:** Understanding Software Vulnerabilities Related to Architectural Security Tactics: An Empirical Investigation of Chromium, PHP and Thunderbird. *International Conference on Software Architecture (ICSA 2017)*. Gothenburg, Sweden. **Conference Presentation**
- › **April 4th, 2017:** A Catalog of Security Architecture Weaknesses. *International Conference on Software Architecture (ICSA 2017)*. Gothenburg, Sweden. **Conference Presentation**
- › **April 12, 2016:** Model-Driven Solution to Design and Automatically Deploy Software in the Cloud. *International Conference on Information Technology: New Generations (ITNG 2016)*. Las Vegas, Nevada. **Conference Presentation**

PROFESSIONAL DEVELOPMENT ACTIVITIES

- › **May 11th, 2026:** NSF CISE CAREER Workshop. *Alexandria, VA. USA.*
- › **May 9th – 10th, 2024:** 2024 NSF SaTC Aspiring PI Workshop. *Chicago, IL. USA.*
- › **November 2nd – 4th, 2023:** CRA-WP Career Mentoring Workshop. *Chicago, IL. USA.*
- › **February 24th – 25th, 2022:** CRA Career Mentoring Workshop. *Washington, DC. USA.*
- › **January 3rd – 4th, 2022:** National Effective Teaching Institute – Introduction to Successful Teaching for STEM Faculty (NETI-1A). *Virtual.*
- › **August 15th & July 25th, 2022:** NDR Faculty Development Workshop. Session #3: Hallmarks of Successful Applications & Session #4: NDR Support for Researchers. *University of Notre Dame. Notre Dame, IN. USA.*
- › **August 16th – 17th, 2021:** New Faculty Teaching Workshop. *The Kaneb Center for Teaching Excellence at the University of Notre Dame. Notre Dame, IN. USA.*
- › **November 18th, 2021:** Using Vocareum with Canvas for Teaching with Jupyter Notebooks. *University of Notre Dame. Virtual.*
- › **September 16th, 2021:** Gathering Early Semester Feedback Workshop. *The Kaneb Center for Teaching Excellence at the University of Notre Dame. Notre Dame, IN. USA.*