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## Education & Training

**Ph.D., Computer Sciences (Software Engineering)** | Northern Arizona University (NAU) (2019 - 2023)

**Ph.D., Informatics (Information Systems, Knowledge Modeling, and Reasoning)** | Federal University of Rio de Janeiro State (UniRio)(2017 - 2022)

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## Research

**Computer Science Scholar (Post Doctoral Staff)** | Colorado State University (CSU) (2004)

- Measure the skill-based learning progress in mid-level coding classes.
- Matching hard and soft skills in job postings and Computer Science Syllabi.
- Quality evaluation of automatically generated code by Large Language Models.
- Attrition detection and toxicity evolution in software projects.
- Disengagement detection and automatic recruitment of OSS contributors.

**Graduate Research Assistant** | Northern Arizona University (NAU) (2021-2023)

- AI4SE: Skill prediction to solve open tasks in projects using GitHub.

**Research Software Engineer (PhD intern)** | IBM Research (2018-2019)

- Document comprehension project with knowledge modeling for natural resource management with multimedia resources using hyperknowledge.

**DBEM Think Tank** | Federal University of Rio de Janeiro State (UniRio) (2018-)

- Pattern mining uses Markov chains and frequent itemsets to address the matching of large-scale networks of ontologies.

**ALICE Group** | Federal University of Rio de Janeiro State (UniRio) (2017 - 2018)

- Reducing the search scope in matching tasks with algebraic operations over graph representations of networks of ontologies.
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## Professional Experience

**IT Manager** | Brazilian Navy (2012-2017)

- Relied upon for conducting Information Technology planning and responsible for setting organizational strategy for key technical projects and IT operations, ensuring key metrics such as payback, internal rate of return, and total cost of ownership calculations were communicated.
- Effectively created specific metrics and action plans derived from the IT Strategy Plan.
- Successful track record of delivering improved operational efficiencies resulting in tangible organizational cost savings.
- Supervise the IT Director's plan and manage suppliers and third-party contracts. Validation of RFP, bids, and acquisitions. Approval of payments: Procurement and Contracts.
- Excelled in a critical technical role that oversaw the standardization policy for all development teams throughout the Navy business units.
- Successfully led several projects, including an organization-wide software standardization policy that resulted in decreased security problems in deployed systems.

**Project Manager, System Analyst, and Software Engineer** | Brazilian Navy (2002-2012)

- Accountable for developing and maintaining an amphibious warfare simulator leveraging the Lua programming language using agile methods.

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### Publications

- Chen, Yunqi, Stol, Klass-Jan, Santos, Fabio, Trinkenreich, Bianca. “How Does Core Contributor Disengagement Impact Open Source Project Activity? A Quasi-Experiment”. Accepted at International Conference on Software Engineering- ICSE, 2026.
- Alfred Santa Molison, Fabio Santos, Marcia Moraes, Glaucia Melo, Wesley Assunção “Is LLM-Generated Code More Maintainable & Reliable than Human-Written Code?” ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM). 2025.
- Sarthak Siddhant Bharadwaj, Fabio Santos, Bianca Trinkenreich “The Shifting Sands of Toxicity: The Evolving Nature of Interpersonal Challenges in Open Source” ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM). 2025.
- Md Abdul Hannan, Mohammad Habibullah Rakib, Khondaker Masfiq Reza, Fabio Santos “Contribution History as a Key Feature in OSS Task Recommendation: an LLM-Based Empirical Study” ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM). 2025.
- Spencer Balouga Loufek, Fabio Marcos De Abreu Santos, Bianca Trinkenreich “Beyond the Job Posting: What Hiring Managers Really Seek in Entry-Level CS Candidates” ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM). 2025.
- Aracena, Gabriel, Kyle Luster, Fabio Santos, Igor Steinmacher, and Marco A. Gerosa. "Applying Large Language Models API to Issue Classification Problem: Revisiting with Extended Data and New Models" Science of Computer Programming SCICO (2025).
- Benjamin C. Carter, Jonathan Rivas Contreras, Carlos A. Llanes Villegas, Pawan Acharya, Jack Utzerath, Adonijah O. Farner, Hunter Jenkins, Dylan Johnson, Jacob Penney, Igor Steinmacher, Marco A. Gerosa, Fabio Santos. “SkillScope: A Tool to Predict Fine-Grained Skills Needed to Solve Issues on GitHub”. 4<sup>th</sup> Intl Workshop on NL-based Software Engineering (NLBSE 2025).
- Trinkenreich, Bianca., Santos, Fabio., Stol, Klaas-Jan. “Predicting Attrition among Software Professionals: Antecedents and Consequences of Burnout and Engagement”. Accepted at ACM Transactions on Software Engineering and Methodology- TOSEM, 2024.
- Aracena, Gabriel, Kyle Luster, Fabio Santos, Igor Steinmacher, and Marco A. Gerosa. "Applying Large Language Models API to Issue Classification Problem." (2024). 3<sup>rd</sup> Intl Workshop on NL-based Software Engineering (NLBSE 2024).
- Santos, Fabio., Vargovich, Joseph., Trinkenreich, Bianca. et al. Tag that issue: applying API-domain labels in issue tracking systems. Empirical Software Engineering (EMSE) 28, 116 (2023).
- Santos, Fabio., Penney, Jacob., Pimentel., João Felipe., Wiese, Igor., Steinmacher, Igor., Gerosa, Marco, Tell Me Who Are You Talking to and I Will Tell You What Issues Need Your Skills, 20<sup>th</sup> Mining Software Repositories (MSR), 2023.

- Vargovich, Joseph., Santos, Fabio., Penney, Jacob., Gerosa, Marco, Steinmacher, Igor, GiveMeLabeledIssues: An Open Source Issue Recommendation System 20<sup>th</sup> Mining Software Repositories (MSR) – Data and Tool Showcase, 2023.

- Santos, Fabio, et al. How to choose a task? Mismatches in perspectives of newcomers and existing contributors. ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM). 2022.

- Santos, Fabio., Wiese, Igor., Trinkenreich, Bianca., Steinmacher, Igor., Sarma, Anita., Gerosa, Marco, Can I Solve It? Identifying APIs Required to Complete OSS Tasks, 18th Mining Software Repositories (MSR), 2021.

- Santos, Fabio, and Carlos E. Mello. Matching Network of Ontologies: A Random Walk and Frequent Itemsets Approach. IEEE Access 10 (2022): 44638-44659.

- Santos, Fabio, Kate Revoredo, and Fernanda Baiao, SUBINTERNM: Optimizing the Matching of Networks of Ontologies, Ontology Matching 77 (2020), Ontology Matching: OM-2020 - collocated with the 19<sup>th</sup> International Semantic Web Conference ISWC-2020