Adriana Sejfia

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Summary

I am a Computer Science PhD candidate. My main research lies in the area of software engineering. Specifically, I am interested in helping software developers with their security and privacy tasks. I employ program analysis and machine learning techniques to generate actionable security- related insights for developers.

Education

August 2018 – *ongoing*
University of Southern California
Ph.D. in Computer Science
Advisor: *Nenad Medvidović*

August 2016 – May 2018
Rochester Institute of Technology
M.Sc. in Software Engineering
Advisor: *Mehdi Mirakhorli*
College Delegate

September 2011 – May 2015
Rochester Institute of Technology in Kosovo
B.S in Information Technology
Class Valedictorian

Research Experience

August 2018 – *ongoing*
University of Southern California
Research Assistant
- Automated cleaning of datasets comprised of patches using program analysis
- Pattern-based vulnerability detection using program analysis and machine learning
- Understanding architectural vulnerabilities

May 2022 – September 2022
Google
Research Intern
- Static analysis for verifying privacy attributes

May 2021 – August 2021
GitHub Inc., Office of the CTO (OCTO)
Research Intern
- Analyzed malicious npm packages and devised learning models for their automated detection

January 2017 – May 2018
Rochester Institute of Technology
Research Assistant
- Researched tracing vulnerabilities across different revisions of a software
- Analyzed vulnerabilities stemming from architectural vs. implementation mistakes

Research Experience (continued)

January 2013 – May 2013 — Rochester Institute of Technology in Kosovo
Research Assistant
- Conducted interviews with relevant stakeholders and performed statistical analysis

Research Publications

Journal Articles

1. Santos, J. C., Tarrit, K., **Sejfia**, **A.**, Mirakhorli, M., & Galster, M. (2019). An empirical study of tactical vulnerabilities. *Journal of Systems and Software, 149*, 263–284.

Conference Proceedings

1. **Sejfia**, **A.**, Das, S., Shafiq, S., & Medvidović, N. (2024). Toward improved deep learning-based vulnerability detection. In *International Conference on Software Engineering (ICSE), **to appear***.
2. **Sejfia**, **A.**, & Schäfer, M. (2022). Practical automated detection of malicious npm packages. In *International Conference on Software Engineering (ICSE)*.
3. **Sejfia**, **A.**, Zhao, Y., & Medvidović, N. (2021). Identifying casualty changes in software patches. In *Proceedings of the 29th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)* (pp. 304–315).
4. **Sejfia**, **A.**, & Medvidović, N. (2020). Strategies for pattern-based detection of architecturally-relevant software vulnerabilities. In *2020 IEEE International Conference on Software Architecture (ICSA)* (pp. 92–102). IEEE.
5. Zhao, Y., Chen, J., **Sejfia**, **A.**, Schmitt Laser, M., Zhang, J., Sarro, F., … Medvidovic, N. (2020). Fruiter: A framework for evaluating ui test reuse. In *Proceedings of the 28th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)* (pp. 1190–1201).
6. Santos, J. C., **Sejfia**, **A.**, Corrello, T., Gadenkanahalli, S., & Mirakhorli, M. (2019). Achilles' heel of plug-and-play software architectures: A grounded theory based approach. In *Proceedings of the 2019 27th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)* (pp. 671–682).
7. **Sejfia**, **A.** (2019). A pilot study on architecture and vulnerabilities: Lessons learned. In *2019 IEEE/ACM 2nd International Workshop on Establishing the Community-Wide Infrastructure for Architecture-Based Software Engineering (ecase)* (pp. 42–47). IEEE.
8. Santos, J. C., Peruma, A., Mirakhorli, M., Galstery, M., Vidal, J. V., & **Sejfia**, **A.** (2017). 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)* (pp. 69–78). IEEE.

Awards and Achievements

2022 — **Heidelberg Laureate Forum**, selected as a Young Researcher Participant

2020 — **Google PhD Fellowship Recipient**, Software Engineering and Programming Technologies category

USC Travel Award, funds to cover participation at ICSA

Awards and Achievements (continued)

- **CRA-WP Grad Cohort for Women**, selected for fully-funded participation

2019
- **Grace Hopper Attendance Scholarship by USC**, selected by the CS department

2018
- **Annenberg Fellowship by USC**, a 4-year funding package from USC

2017
- **Best Paper Award at ICSA**, awarded to the paper entitled "Understanding software vulnerabilities related to architectural security tactics: An empirical investigation of Chromium, PHP and Thunderbird"

2016
- **TLP Scholarship by USAID and Kosovo government**, Fully funded my master's studies in the US

Skills

Programming and technologies
- Java, Python, C/C++, Souffle, R, Bash, jQuery, MacOS, Unix, Windows,

Languages
- Albanian (native), English (full proficiency), Spanish (elementary proficiency)

Invited Talks

2022
- **University of Arizona, Scholar Speaker Series**, invited to present my research on patches and security

Professional Service

2023
- Artifact reviewer for ICSE

2022
- Reviewer for SCORED Workshop
- Artifact reviewer for ICSE

Leadership and Volunteer Experience

2019 – *ongoing*
- **USC Women and gender minorities in Computing Club (WinCC) Board Member**, help in organizing monthly seminars

2015 – 2016
- **Girls in Coding Kosova Founder and Board Member**, led and obtained funding for projects

2011-2016
- **Karl Popper/British Parliamentary Debate Judge**, served in local (Kosovo) and international competitions

2015-2016
- **Karl Popper Debate Coach**, led the team from Peje

References

Available on Request