

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 tasks, by leveraging past patches of security issues. 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.**, Mirakhori, M., & Galster, M. (2019). An empirical study of tactical vulnerabilities. *Journal of Systems and Software*, 149, 263–284.

Conference Proceedings

- 1 **Sejfia, A.**, & Schäfer, M. (2022). Practical automated detection of malicious npm packages. In *International Conference on Software Engineering (ICSE) to appear*.
- 2 **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).
- 3 **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.
- 4 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).
- 5 Santos, J. C., **Sejfia, A.**, Corrello, T., Gadenkanahalli, S., & Mirakhori, 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).
- 6 **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.
- 7 Santos, J. C., Peruma, A., Mirakhori, 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

- 2020
- Google PhD Fellowship Recipient, Software Engineering and Programming Technologies category
 - USC Travel Award, funds to cover participation at ICSA
 - CRA-WP Grad Cohort for Women, selected for fully-funded participation
- 2019
- Grace Hopper Attendance Scholarship by USC, selected by the CS department

Awards (continued)

- 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)

Professional Service

- 2022 ■ Reviewer for SCORED Workshop 2022
- Artifact reviewer for ICSE 2022

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