ALAN ROMANO

Buffalo, NY 14201

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EDUCATION

PhD University of Southern California (GPA: 3.9) 2022 – 2024
Dr. Weihang Wang
Department of Computer Science

University at Buffalo, SUNY (GPA: 3.95) 2018 – 2022
Dr. Weihang Wang
Department of Computer Science and Engineering

BS New Jersey Institute of Technology 2014 – 2018
Summa Cum Laude (GPA: 3.96)
Minor in Applied Mathematics
College of Computing Sciences, Albert Dorman Honors College

HONORS AND AWARDS

Arthur A. Schomburg Fellowship	2018 – 2022
2022 IEEE S&P Travel Grant Award	2022
UB CSE PhD Best Research Award	2021
2021 ACM CCS Travel Grant Award	2021
NJIT Dean's List	2014 - 2018
2nd Place Presentation in Computing – Philadelphia AMP	2016
NJIT Provost Summer Research Fellowship	2016
Ronald E. McNair Post-Baccalaureate Achievement Program	2016

RESEARCH EXPERIENCE

University of Southern California, Los Angeles, CA 2022 – 2024
Research Assistant, Dr. Weihang Wang

- Apply program analysis techniques to aid in WebAssembly development, maintenance, and comprehension.
- Empirically study counterintuitive behavior of compiler optimizations in WebAssembly.

University at Buffalo, SUNY, Buffalo, NY 2019 – 2022
Research Assistant, Dr. Weihang Wang

- Investigate WebAssembly development and debugging methods.
- Design and implement WebAssembly development tools.
- Set up and lead experiments for WebAssembly data collection.

New Jersey Institute of Technology, Newark, NJ 2016 – 2018
Undergraduate Researcher, Dr. Michael Bieber

- Led a team of four programmers to develop Participatory Learning experimental education platform.

- Created necessary webpages using React and Node.js to increase flexibility of assignment structure in the system.
- Managed system frontend design and implementation.

TEACHING EXPERIENCE

University at Buffalo, SUNY, Buffalo, NY 2018 – 2019
Teaching Assistant, Dr. Matthew Hertz

- Assisted in managing CSE 116 entry level and CSE 542 master's level courses.
- Clarified any questions that students would have in class.
- Led in-person classes during professor absence.

PROFESSIONAL EXPERIENCE

United Parcel Service, Mahwah, NJ 2017 – 2018
Enterprise Business Intelligence Intern, Meryl Aronowitz

- Extended functionality of existing online management system used to maintain the allowed standards for all corporate IT software and hardware procurement and usage.
- Collaborated with team to convert legacy website from ColdFusion to .NET.
- Implemented secure file upload functionality into website.

PUBLICATIONS

A. Romano and W. Wang, "When Function Inlining Meets WebAssembly: Counterintuitive Impacts on Runtime Performance," *The* 31st *ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2023 (acceptance: 30%, 142/473) [Available on Personal Website]

A. Romano and W. Wang, "Automated WebAssembly Function Purpose Identification With Semantics-Aware Analysis," *The 32nd ACM Web Conference (WWW)*, 2023, pp. 2885–2894, doi:10.1145/3543507.3583235 (acceptance: 19.2%, 365/1900) [Available on Personal Website]

A. Romano, D. Lehmann, M. Pradel, W. Wang, "Wobfuscator: Obfuscating JavaScript Malware via Opportunistic Translation to WebAssembly," *43rd IEEE Symposium on Security and Privacy (S&P)*, 2022, pp. 1574-1589, doi:10.1109/SP46214.2022.9833626. (acceptance: 15.2%, 54/355) [Available on Personal Website]

A. Romano, X. Liu, Y. Kwon, W. Wang, "An Empirical Study of Bugs in WebAssembly Compilers," *36th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, 2021, pp. 42-54, doi: 10.1109/ASE51524.2021.9678776. (acceptance: 19.2%, 82/427) [Available on Personal Website]

A. Romano, Z. Song, S. Grandhi, W. Yang and W. Wang, "An Empirical Analysis of UI-Based Flaky Tests," *IEEE/ACM 43rd International Conference on Software Engineering (ICSE)*, 2021 pp. 1585-1597. doi: 10.1109/ICSE43902.2021.00141 (acceptance: 23%, 138/602) [Available on Arvix]

A. Romano, Y. Zheng and W. Wang, "MinerRay: Semantics-Aware Analysis for Ever-Evolving Cryptojacking Detection," *35th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, 2020, pp. 1129-1140. doi: 10.1145/3324884.3416580 (acceptance: 22.5%, 93/414) [Available on Personal Website]

A. Romano and W. Wang, "WASim: Understanding WebAssembly Applications through Classification," *35th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, 2020, pp. 1321-1325. doi: 10.1145/3324884.3415293 (acceptance: 62.5%, 18/29) [Available on Personal Website]

A. Romano and W. Wang, "WasmView: Visual Testing for WebAssembly Applications," *IEEE/ACM 42nd International Conference on Software Engineering: Companion Proceedings (ICSE-Companion)*, 2020, pp. 13-16. doi: 10.1145/3377812.3382155 (acceptance: 33%, 25/75) [Available on Personal Website]

TALKS

"When Function Inlining Meets WebAssembly: Counterintuitive Impacts on Runtime Performance," 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), 2023

"Automated WebAssembly Function Purpose Identification With Semantics-Aware Analysis," 32nd The Web Conference (WWW), December 2023.

"Wobfuscator: Obfuscating JavaScript Malware via Opportunistic Translation to WebAssembly," 43rd IEEE Symposium on Security and Privacy (S&P), May 2022.

"An Empirical Study of Bugs in WebAssembly Compilers," 36th IEEE/ACM International Conference on Automated Software Engineering (ASE), November 2021.

"An Empirical Analysis of UI-Based Flaky Tests," 43rd International Conference on Software Engineering (ICSE), May 2021.

"MinerRay: Semantics-Aware Analysis for Ever-Evolving Cryptojacking Detection," 35th IEEE/ACM International Conference on Automated Software Engineering (ASE), September 2020.

"WASim: Understanding WebAssembly Applications through Classification," 35th IEEE/ACM International Conference on Automated Software Engineering (ASE), September 2020.

"WasmView: Visual Testing for WebAssembly Applications," 42nd Annual International Conference on Software Engineering (ICSE), July 2020.

"Probabilistic Testing in the Presence of Flaky Tests," Third Annual Facebook Testing and Verification Symposium, November 2019.

"Building a Flexible and Collaborative Online Learning System," 5th Annual NJIT Innovation Day, April 2017.

"Building a Flexible and Collaborative Online Learning System," Philadelphia AMP 18th Annual Research Symposium, October 2016.

"Building a Flexible and Collaborative Online Learning System," NJIT Ninth International Summer Research Symposium, July 2016.