

ALAN WANG

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in [alan-wang-urd00m/](https://github.com/alan-wang-urd00m) 🎓 [Google Scholar](#) 📍 Berkeley, CA, USA

RESEARCH INTERESTS

I have broad interests in side-channel attacks and defenses, computer architecture, security, and systems. In the past, I have also been interested in drug discovery and MD simulations.

EDUCATION

University of California, Berkeley	Berkeley, California
Ph.D. in Computer Science	2025–2030
University of Illinois at Urbana–Champaign	Urbana, Illinois
Conjoined BSMS in Computer Science	2021–2025

PUBLICATIONS

- [1] First author. “Redacted”. In: *Redacted*. 2026.
- [2] Alan Wang et al. “Pixnapping: Bringing Pixel Stealing out of the Stone Age”. In: *Proceedings of the 32nd ACM SIGSAC Conference on Computer and Communications Security (CCS)*. 2025. URL: <https://www.pixnapping.com>.
- [3] Siyuan Chai et al. “EMT: An OS Framework for New Memory Translation Architectures”. In: *Proceedings of the USENIX Symposium on Operating Systems Design and Implementation (OSDI)*. 2025.
- [4] Alan Wang et al. “Peek-a-Walk: Leaking Secrets via Page Walk Side Channels”. In: *Proceedings of the IEEE Symposium on Security and Privacy (S&P)*. 2025.
- [5] Rutvik Choudhary et al. “Declassiflow: A Static Analysis for Modeling Non-Speculative Knowledge to Relax Speculative Execution Security Measures”. In: *Proceedings of the ACM SIGSAC Conference on Computer and Communications Security (CCS)*. 2023.
- [6] Alec Auster et al. “MITHRIL: Mars Ice Thermal Harvesting Rig and ISRU Laboratory”. In: *Proceedings of AIAA ASCEND*. 2022.

HONORS & AWARDS

- NDSEG Fellowship, *Department of Defense* 2026
- IEEE Micro Top Picks Honorable Mention, *IEEE* 2026
- Jane Street GRF Finalist, *Jane Street* 2026
- 3x High-Severity Bug Bounty Awards, *Google* 2025
- NSF GRFP Honorable Mention, *National Science Foundation* 2025
- Bronze Tablet Scholar Award, *University of Illinois at Urbana-Champaign* 2025
- Siebel Scholar Award, *Siebel Scholars Foundation* 2025
- Best Poster in Theme, *SRC PRISM* 2025
- Dean’s List, *Grainger College of Engineering, UIUC* 2021–2023
- 2nd Place Overall, *NASA RASC-AL Competition* 2022

EXPERIENCE

University of California, Berkeley
Graduate Research Assistant

Berkeley, CA, USA
August 2025 – Current

- Redacted: work under submission
- Recent work: pixnapping.com. This work presents a new class of side-channel attacks on Android devices. Most notably, these attacks steal app-based 2FA codes in under 30 seconds
- Attacks: researching side-channel attacks inherent to graphics stacks (i.e., pixel stealing attacks)
- Defenses: exploring defenses for the side-channel vulnerabilities found by my attack research

Jane Street
Software Developer Intern

New York, NY, USA
May – August 2024

- Worked with billions of trade orders submitted to the SEC
- Improved the efficiency and utilization of servers used by the entire firm

D. E. Shaw Research
Computer Science Intern

New York, NY, USA
May – August 2023

- Researched docking and non-equilibrium FE calculation methods
- Wrote system software which ran thousands of simulations on Anton3 ASICs and achieved a 2.5x performance improvement

FPSG Lab
Research Assistant

Urbana, IL, USA
September 2021 – May 2025

- Created a new class of side-channel attacks on Android devices.
- Created a new general-purpose cache side channel exploiting page walkers and used it to exploit the Linux kernel using Spectre-V2 and the Intel DDP
- Helped build a new Linux framework to support new, radical memory translation architectures
- Modelled non-speculative information flow to decrease mitigation overhead by up to 21%

Argonne National Lab
Research Aide

Lemont, IL, USA
May 2022 – May 2023

- Worked with NVIDIA's Bluefield-3 Data Processing Unit (DPU) for zero trust network architectures
- Found critical errors by instrumenting Portable Batch System (PBS) for Argonne's extreme scale systems
- Developed a command line interface for Argonne's UserBase3, used by all Argonne admins

Argonne National Lab
Visiting Student

Lemont, IL, USA
February – May 2022

- Led the design of a ROS2 interface for Argonne's self-driving lab
- Built key infrastructure for Argonne's self-driving lab

Northwestern University
Undergraduate Research Assistant

Evanston, IL, USA
February 2021 – June 2022

- Researched the vulnerability INTEL-SA-00086 to gain access to Intel's most secure piece of hardware (microcode project)

Argonne National Lab
DoE College Bound Research Intern (CBRP)

Lemont, IL, USA
June – August 2021

- Started the design of a ROS2 interface for Argonne's self-driving lab
- Created important building blocks for future work in Argonne's self-driving lab

Office of Naval Research
SEAP Intern

Crane, IN, USA
Summers 2019 & 2020

- Led the development of autonomous bomb-defusing robots
- Repaired software related to navigation, object recognition, and arm manipulation

TECHNICAL SKILLS

Programming Languages: C, C++, Python, x86 & ARM Assembly, OCaml, Bash, Rust, Java, Swift, SystemVerilog, Fortran, C#

Systems & Tools: Linux, ROS/ROS2, Git, L^AT_EX, LLVM, Android, iOS, macOS, Windows

TALKS & PRESENTATIONS

- Pixnapping: Bringing Pixel Stealing out of the Stone Age, *Berkeley Security Semianr* February 2025
- Pixnapping: Bringing Pixel Stealing out of the Stone Age, *Stanford Security Seminar* February 2025
- Pixnapping: Bringing Pixel Stealing out of the Stone Age, *SLICE Retreat* January 2025
- Pixnapping: Bringing Pixel Stealing out of the Stone Age, *ACM CCS* October 2025
- Peek-a-Walk: Leaking Secrets via Page Walk Side Channels, *Intel IPAS* July 2025
- Peek-a-Walk: Leaking Secrets via Page Walk Side Channels, *IEEE S&P (Oakland)* May 2025

MENTORING

- Jonathan Ji, *Undergrad Research Mentor* 2026-current
- Ailsa Sun, *Undergrad Research Mentor* 2026-current
- Kaustubh Khulbe, *Undergrad Research Mentor* 2025 spring
- Ishan Buyyanapragada, *ACM Mentor* 2024-2025
- Spencer Acquah, *ACM Mentor* 2023-2024
- Christopher Suarez, *ACM Mentor* 2023-2024

TEACHING

- Course Grader, *University of Illinois at Urbana-Champaign* 2023