ALAN WANG

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EXPERIENCE:

Software Developer @ Jane Street **May 2024 – August 2024**
- Working on software to process data faster

Computer Science Intern @ D. E. Shaw Research **May 2023 – August 2023**
- Researching docking and non-equilibrium FE calculation methods
- Writing system software to run thousands of simulations on Anton3 ASICs
- Writing embedded code that achieves 2.5x speedup on docking simulations

Research Assistant @ FPSG Lab **September 2022 – Current**
- Advised under Professor Chris Fletcher with collaborators across several institutions
- Exploring new microarchitectural side channel techniques and attacks
- Reverse engineering microarchitectural structures and using them to leak secrets
- Declassiflow project: modelling non-speculative information flow to improve performance, implemented using LLVM

Research Aide @ Argonne National Lab **May 2022 – May 2023**
- Working with NVIDIA's Bluefield-3 Data Processing Unit (DPU) for zero trust network architectures
- Finding critical errors by instrumenting Portable Batch System (PBS) for Argonne's extreme scale systems
- Developed and programmed a command line interface for Argonne's UserBase3 and used by all Argonne admins
- Designed and collected data for a Python concurrency research project for the Operations division director

Visiting Student @ Argonne National Lab **Feb 2022 – May 2022**
- Led the design of a ROS2 interface for Argonne's self-driving lab
- Built key infrastructure for Argonne's self-driving lab

Undergraduate Research Assistant @ Northwestern University **Feb 2021 – June 2022**
- Researched the vulnerability INTEL-SA-00086 to gain access to Intel's most secure piece of hardware (microcode project)
- Worked on the FPVM project led by Professor Peter Dinda

DoE College Bound Research Intern (CBRP) @ Argonne National Lab **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

SEAP Intern @ Office of Naval Research **June – August of 2019, 2020**
- Led the development of autonomous bomb-defusing robots
- Repaired a variety of programming errors related to navigation, object recognition, and arm manipulation

PUBLICATIONS:

- **Hardware Security**, first author, *under review '25*
- **Declassiflow**, second author, *ACM CCS '23*
- **Mars Ice Thermal Harvesting Rig & ISRU Laboratory (MITHRIL)**, *ASCEND '22*

ACHIEVEMENTS:

- **TBA,** 2024
- **Dean's List:** UIUC's Grainger College, 2021 – Current
- **2nd Place Overall:** NASA RASC-AL 2022 (published ASCEND '22)
- **Gold Level**: USA Computing Olympiad (USACO)
- **Round 2 qualifier**: Google Codejam coding competition

SKILLS:

- **Programming:** C/C++, Python, Bash, Java, x86-64, CUDA, Verilog, OCaml
- **Others:** Linux, ROS 1 & 2, OS X, Git, LLVM

EDUCATION:

BSMS in Computer Science, University of Illinois at Urbana-Champaign **2021-2025**
- **GPA:** 4.0 **Advisor:** Professor Chris Fletcher
- **Activities:** Intramural Soccer, Triathlon club, and ISS RASC-AL member

COMMUNITY SERVICE:

- Taught a free month-long Java course to over 100 K-12 students in the Chicagoland area, June 2020
- Taught a free month-long competitive programming course to 30 K-12 students in the Chicagoland area, Jan 2021
- ACM Mentor – Helping incoming freshman transition to college life, June 2022 - Current