George Huebner

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Education

University of Illinois Urbana-Champaign May 2026
Bachelor of Science in Computer Science
Bachelor of Science in Physics GPA: 3.69

Coursework: Quantum Complexity Theory, Quantum Optics, Operating Systems, Algorithms, Parallel Computing

Work Experience

Recurse Center June 2025 – August 2025
Attendee *Brooklyn, NY*

- Researched security of Linux user and kernel space applications, particularly bypasses for common mitigations, microarchitectural side-channels, and timing attacks.
- Pair programmed with many fellow recursers on shader programming, lisp interpreters, ROP, and fuzzing

Kwiat Quantum Information Group January 2024 – Present
Research Assistant *Urbana, IL*

- Built a fuzzing harness to audit the mission-critical packet protocol used in SEAQUE, the self-healing quantum entanglement experiment aboard the ISS
- Halved the runtime of quantum tomographies on the STM32 by optimizing SVD floating-point instruction count

Red Hat May 2023 – August 2023
System Administrator Intern *Boston, MA*

- Patched vulnerabilities and deployed RHEL upgrades to hundreds of Ceph and Bareos hosts with Ansible
- Automated ONTAP snapshot processing to meet data integrity requirements, expediting cluster relocation by a week

Activities and Projects

pwnypus: CTF tooling for darwin March 2024 – Present

- Upstreamed patches in six mathematical software projects to support compiling Sagemath with Clang
- Created Xenu, an interface that enhances NixOS VMs with the Rosetta dynamic translator to run virtualized x86_64 Linux binaries at near native speed (3x faster than emulation with QEMU)
- Maintaining Nix packages/modules for Binary Ninja, Burp Suite, X11, and BPF

SIGPwny September 2022 – Present

- Help run UIUC's cybersecurity club (and largest educational student organization), organizing and presenting weekly meetings on topics including reverse engineering, binary/web exploitation, and cryptography
- Led the development of UIUCTF 2024 (958 teams competing for $6k+ in prizes); deployed a customized rCTF instance to GCP with Terraform and Kubernetes, in addition to managing a team of 20 challenge developers and web designers

MITRE eCTF January 2023 – April 2023

- Bootstrapped embedded Rust development of a secure remote keyless system
- Lead a subteam of 10 undergraduates in designing a cryptographically secure communications protocol resistant to replay attacks and hardware side-channels
- Ranked 3rd place out of 60 teams globally

Quantum Bogosort April 2022 – April 2023

- Designed a novel quantum state preparation algorithm that uses a divide-and-conquer strategy to prepare a uniform superposition of a basis-encoded integer interval
- Profiled the effect of rotation gate fidelity and CNOT count on state purity using Qiskit to target the IBMQ Santiago quantum processor
- Presented at the 2022 Regeneron International Science and Engineering Fair, published in SIGBOVIK 2023

Skills

Programming Languages: Nix, Lisp, CUDA, Python, Rust, C/C++, SystemVerilog, Haskell
Technologies: QEMU, GDB, Ghidra, Terraform, Kubernetes, RHEL (RHCSA), Qiskit, Mathematica