Sidaarth (Sid) Sabhnani

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Education

The University of Texas at Austin Austin, TX
M.S. Computer Science | GPA 3.96/4.0 May 2026
Thesis: From Lattices to Tensor Cores: Accelerating Communication-Efficient PIR | Advisor: Prof. David Wu
B.S. Computer Science Honors | B.B.A. Canfield Business Honors May 2025

Relevant Coursework: Operating Systems, Programming Languages, Computer Architecture, Cryptography, Security, Distributed & Concurrent Computing, Algorithms, ML Hardware-Algorithm Codesign

Experience

IMC Trading, *Graduate Software Engineer | Chicago, IL | C++* Aug. 2026 – Present (Incoming)

IMC Trading, *Software Engineering Intern | Chicago, IL | C++, Bazel, Gerrit* Jun. 2025 – Aug. 2025

- Engineered low-latency packet transmission features in a custom C++ networking stack for FPGA-accelerated trading
- Designed and retrofitted runtime with concurrent hardware- and software-managed TCP sockets, unlocking strategies
- Developed bidirectional socket migration between hardware and software modes and a lightweight `tcpdump` clone
- Validated with integration tests and profiling; collaborated with global hardware teams on a production-critical release

The University of Texas at Austin, *OS Teaching Assistant: CS 439, 439H | Austin, TX | C++, QEMU, x86* Jan. 2024 - Dec. 2024

- Led weekly discussion sections, designed quizzes, and held office hours for 100+ students for Dr. Gheith's course
- Mentored students on semester-long kernel projects: virtual memory, file systems, processes, drivers, and networking
- Developed custom test suites for lab assignments and administered custom automated grading pipelines

Sandia National Laboratories, *Software Engineering Intern | Livermore, CA | TypeScript, WebDriver* June 2024 - Aug. 2024

- Built highly-tested automated tools to increase deployment efficiency by 96% for classified communications projects
- Introduced generics and concurrent runtimes in data pipelines to increase code efficiency, reliability, safety

SparkCognition, *Software Engineering Intern | Austin, TX | Python, PyTorch, Docker, Kubernetes* May 2022 - Aug. 2022

- Led creation of company-wide Python SDK to automate productization of machine learning models via MLflow
- Expedited data science workflows from minutes to seconds with support for REST, gRPC, and cloud inference servers

Community Leadership

Freetail Hackers, *Co-President | UT Austin, Major League Hacking (MLH)* Jan. 2023 - Dec. 2024

- Co-led 8-person director team (focus: tech, design, logistics) and 40-person organizer teams to run hackathons
- HackTX, Spring Hackathons: Hosted 2,000+ hackers with $160,000 for free events with meals, sponsors, workshops
- Judged for 22 sponsor & grand prizes from over 450 submissions; organized deliberations via Gavel, Devpost software
- Spearheaded HackTX 2024 to the largest ever with support from University's Year of AI team via tech, prizes, venues

Projects

UT Cryptography Research | *Rust, CUDA, CuBLAS/CUTLASS* Aug. 2025 – Present

- Designed GPU-accelerated PIR construction: 4x faster at 4x lower cost than SOTA w/ correctness and security proofs
- Reduced polynomial ring packing to a single dense GEMM, enabling end-to-end tensor-core speedup over prior SIMT
- Implemented scheme in Rust with CUDA FFI: NTT polynomial ops, byte-decomposed GEMM, multi-stream pipelining

JellyOS | *Rust, ARM* May 2024 - Present

- Designing a monolithic operating system from scratch in Rust, running bare-metal on Raspberry Pi 3B (AArch64)
- Wrote device drivers, UART, XMODEM communication protocols, FAT32 file system, virtual memory, processes, networking

MirageRaft | *OCaml, Xen* Aug. 2024 - Dec. 2024

- Implemented a fault-tolerant Raft in OCaml, achieving 2x throughput with MirageOS unikernels vs. Linux VMs on Xen
- Benchmarked across five environments, showing 10x lower memory usage for unikernels on Xen vs. Linux VMs

Phazia | *TypeScript, React, Redux, Rust, MongoDB* Aug. 2022 - May 2023

- Engineered full-stack components for drag-and-drop web product for creating Flutter, React Native mobile apps
- Implemented file representations of projects via protobuf, allowing multiplayer editing via Rust websocket microservice

Skills

Programming Languages: C++, C, Rust, Assembly (ARM, x86, RISC-V), TypeScript, Python, Bash

Tools: Bazel, GDB, Git, Make, perf, QEMU, Linux, tmux, LaTeX, Wireshark, magic-trace

Libraries: CUDA, gtest/gMock, Matplotlib, React, Django, PyTorch, Docker, Kubernetes

Interests: Running, Basketball, South Asian Languages, Caffeinated Beverages, Programming Languages