Neil Kaushikkar

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EDUCATION

University of Illinois Urbana-Champaign
Bachelor of Science in Computer Science, GPA: 3.9/4.0 *May 2024*

- Honors: Engineering James Scholar, Dean's List
- Coursework: Distributed Systems, Computer Security, Operating Systems, Advanced Computer Architecture, Data Structures, Algorithms, Cloud Storage Systems, System Programming, Databases, Computer Networks

SKILLS

Languages: C, C++, Rust, Python, Bash/Shell Scripting, SQL, Verilog, RISC-V, x86 Assembly
Frameworks, Interfaces, Platforms: Kubernetes, Docker, kernel programming, Linux, Unix/Posix, Azure, AWS
Other Skills: git, helm, network protocols (TCP, UDP), Loadable Kernel Modules

WORK EXPERIENCE

University of Illinois Urbana-Champaign **Champaign, IL**
Distributed Systems Researcher *Aug 2023 - Present*

- Developing a fast POSIX-compliant distributed file system targeting Compute Express Link CXL shared memory for a rack of servers in a data center using C++ allowing different servers to share files on one disk
- Creating efficient caching schemes for modern storage systems like Cassandra, RethinkDB, & SplinterDB

Jump Trading **Chicago, IL**
Software Engineering Intern *Jun 2023 - Aug 2023*

- Developed ETL jobs with Python and pandas to transform market data to compute tick-to-trade latency
- Integrated Helm into Kubernetes deployment systems to manage Kubernetes deployments and rollbacks
- Efficiently containerized proprietary software for up to a 90% reduction from installed size to container size

University of Illinois Urbana-Champaign **Champaign, IL**
Undergraduate Lecturer *Jan 2022 - May 2023*

- Lead instructor for an undergraduate course at UIUC that teaches Rust to 300 first year students each semester
- Presented weekly lectures covering memory safety & concurrency to supplement introductory CS curriculum
- Created Rust programming assignments with automated grading to teach concepts like MapReduce and KNN

Twilio **San Francisco, CA**
Software Engineering Intern *May 2022 - Aug 2022*

- Containerized 4 Scala REST services from the core billing pipeline in production as part of the billing engineering team's migration to Amazon Linux 22, reducing boilerplate deployment code by 70%
- Optimized internal Scala, Python, & Java billing engineering libraries for a 25% reduction in unactionable pages to on-call engineers by monitoring & scheduling outbound network traffic in multi-threaded code
- Proactively reduced billing engineering outage response times by updating Scala billing services to report historical changes in billable items & developed Spark jobs to aggregate audit metadata & find outage sources

Country Financial **Champaign, IL**
Software Engineering Intern *Jan 2021 - Aug 2021*

- Designed an end-to-end system to automate authenticating clients in call centers with Azure Natural Language Understanding & Speech-to-Text saving over 200 hours/week of manual customer validation
- Developed a REST API with a Java-based Azure Functions App & a PostgreSQL database to securely stream audio between cloud & on-premise systems & cross-check callers' spoken identifying information
- Re-platformed Java Spring Boot applications to Azure Cloud using Traffic Manager, Redis Caching, & Service Bus Queues, assisting the company's transition to the cloud & saving $6 million in operating costs

NASA Ames Research Center **Mountain View, CA**
Software Engineering Intern *Jun 2019 - Aug 2019 & Jun 2020 - Aug 2020*

- Developed Python code to generate building instructions & calculate performance benchmarks for all modes of modular drones, assisting NASA's Aeronautics Research Institute's UAV Traffic Management Initiative
- Co-wrote a conference paper (DOI: 10.2514/6.2020-3154) with Dr. Parimal Kopardekar for the AIAA 2020 Multidisciplinary Design Optimization Forum detailing this project's work in optimizing modular drones