

MITCHELL GRAY

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Education

Georgia Tech, Atlanta, GA

Master's of Science, Computer Science

Jan 2025 – Aug 2026 (Part-Time)

GPA: 4.0; Machine Learning

Cornell University, Ithaca, NY

Bachelor's of Science, Computer Science

Aug 2020 – May 2024

Minor, Operations Research Information Engineering

Distributed Systems

30 Extra Graduate-Level Credits

Knowledge Domain: Distributed Systems · Systems Programming · Databases · Cloud Computing · AI · ML

Technical Skills

Languages: C · PL/SQL · C++ · Python · Java · Rust

Software & Tools: Git · NumPy · Pandas · Poetry · CMake · CI/CD · Docker · Kubernetes · GCP · Azure · AWS · REST

Relevant Work Experience

Oracle

Redwood City, CA

Software Developer II | C, PL/SQL, Raft, Java, OracleDB, OCI

May 2025 – Present

- Working on Shard Native Replication (SNR) in the Oracle Globally Distributed Database · Implementing the **Raft** Consensus algorithm for Shard Replication · Writing Distributed Systems code in **C**, **Java**, and **PL/SQL**.

Software Developer I

June 2024 – May 2025

- Engineered a fault-tolerant Replica replication feature on Oracle Cloud Infrastructure · Enforced placement of Raft Replicas on separate server racks to eliminate single-rack replication-unit failures and improve database availability.
- Refactored over 1,200 lines of Sharding serialization code to eliminate a critical data-loss defect · Designed robust de/serialization pipelines and multi-format conversion logic that greatly improved data integrity and system reliability.
- Optimized SNR's Replica "Copy" and "Move" operations · Resolved critical memory management issues, corrected existing logic errors, and batched I/O calls to significantly enhance reliability and throughput · Achieved a **700%** performance improvement without workload and **250%** improvement under active workloads.
- Resolved critical recoverability issue in SNR's Replica Copy/Move operations by ensuring complete transfer of essential recovery-related tables and data between Replicas · Improved reliability and system integrity during Replica failure.
- Implemented comprehensive Pluggable DBs (PDBs) lifecycle management for SNR · Enabled seamless Drop, Unplug, and Plug operations of PDBs to streamline maintenance for Sharded Databases using a multi-tenant container architecture.
- Enhanced error-handling mechanisms throughout the SNR codebase · Enabled accurate and timely error reporting even during database recovery · Optimized error-display logic and filtering, significantly streamlining database error management · Improved diagnostic speed, and simplified troubleshooting workflows for customers.

Gecko Robotics

Pittsburgh, PA

Software Engineer Intern | C++, Python, C, CMake, GCP, CI/CD

May 2023 – Aug 2023

- Worked on the Robot Controls team · Wrote code for an asynchronous distributed system in **C++**, **Python**, and **C**.
- Revamped Robot & DAQ emulators · Implemented communications protocol and Client/Server TCP networking.
- Replaced VS build-system with **CMake** · Added calibration support to emulators · Integrated **CI/CD** and **Poetry**.

CMU-Software Engineering Institute

Pittsburgh, PA

DevOps Engineer Intern | Python, Rust, CI/CD, Docker, Kubernetes

May 2022 – May 2023

- Developed **Python**, **Rust**, and **Bash** code on various NDA projects · Updated and created **CI/CD** pipelines · Created GitLab **REST API** data visualizations for clients · Used **ArgoCD** and **Helm** to deploy **AWS EKS** cluster.
- Improved efficiency of the company by using **Python**, **Neo4j**, **NeoDash**, **Confluence** Documents, and the PageRank algorithm to create scripts, metrics, and long-term documentation that are now used throughout the company.

Additional Work Experience

Georgia Tech & Cornell University

Atlanta, Georgia & Ithaca, NY

Graduate Teaching Assistant | Python, NumPy, SQL, Java

Aug 2022 – Present

- Received the **Course Staff Exceptional Service Award** · Taught Graduate AI, Databases, OOP, and Physics.

Cornell Database Group

Ithaca, NY

Database Research Intern | Java, AWS

Jan 2022 – May 2024

- Published and presented paper at **VLDB 2023** on combining Reinforcement Learning and Worst-Case Optimal Joins.
- Worked on upgrading query engine to a **Distributed Architecture** · Created dynamic statistics & RL visualizations.