# Mitchell Gray

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## Education

**Cornell University, Ithaca, NY** **Aug 2020 – May 2024**

*Bachelor's of Science, Computer Science* *30 Graduate Credits*

*Minor, Operations Research Information Engineering* *Deans List: FA 2022, FA 2023, SP 2024*

**Relevant Coursework**: Applied High-Performance and Parallel Computing · Distributed Computing · Cloud Computing · Systems Programming · Info Networks · Databases · Operating Systems · Software Testing · AI

## Technical Skills

**Languages**: Java · C++ · Python · SQL · Bash · C

**Software & Tools**: CosmosDB · Neo4j · Azure Functions · Azure · Google Cloud · AWS · Kafka · Git · Protobuf · CI/CD · Docker · Kubernetes · Tableau · Qlik · pandas · NumPy · JavaFX · PyQT · Mockito · JUnit · Poetry · Maven · CMake

## Relevant Work Experience

**Oracle** **June 2024 – Present**

*Software Developer I* | **C, SQL, PL/SQL, OracleDB, Raft** *Redwood City, CA*

- Adding functionality to the Distributed Database on the Shard Native Replication team · Writing Distributed Systems code in **C** and **PL/SQL** · Unit-Testing large-scale software · Utilizing **Raft** for replication · Using **SQL** and **PL/SQL**.

**Gecko Robotics** **May 2023 – Aug 2023**

*Software Engineer Intern* | **C++, Python, CMake, C, Google Cloud, CI/CD** *Pittsburgh, PA*

- Worked on Robot Controls team · Revamped Robot & Data Acquisition emulators · Implemented new communications protocol · Wrote code for an asynchronous distributed system · Client/Server TCP networking · Replaced Visual Studio build-system with **CMake** · Added emulator support for calibratable data · Integrated **Github Actions** and **Poetry**.

**CMU-Software Engineering Institute** **May 2022 – May 2023**

*DevOps Engineer Intern* | **Python, Bash, Neo4j, Docker, Kubernetes, CI/CD** *Pittsburgh, PA*

- NDA · Updated and created **Gitlab CI** pipelines · Developed **Python** and **Bash** scripts · Created **REST API** data visualizations using **Qlik** · Used **ArgoCD** to deploy **AWS EKS** cluster · Improved efficiency of the company by using **Python**, **Neo4j**, **NeoDash**, and the PageRank algorithm to create useful metrics / long-term documentation · Wrote 30+ page whitepaper using LaTeX · Worked in an agile development environment.

## Research

**ADOPT: Adaptively Optimizing Attribute Orders** | ***Java, AWS*** | *Github* | *VLDB* **Jan 2022 – Present**

- Paper accepted and presented at **VLDB 2023** · Currently working on transforming the query engine into a **distributed query engine** · Created dynamic data visualizations for the ADOPT query engine using **Java**, JavaFX, and GraphStream · Visualized the engine's reinforcement learning and worst-case optimal join algorithms.

## Projects

**Distributed Testing Platform (SPEED)** | Masters Project | ***Java, JUnit, Cloud*** | ***Github*** **Aug 2023 – May 2024**

- My team and I created a Scalable Platform for Efficient Execution of Distributed testing. The fault-tolerant system contains a controller node that orchestrates worker nodes that run **JUnit** tests on **Java** code. The worker nodes report their findings to the controller. Once all tests are ran, test results are shown in the frontend to the user.

**DS-Labs Sharded Key Value Store** | Distributed Computing | ***Java, Paxos, 2PC*** | *Github* **Jan 2023 – May 2023**

- Using the DS-Lab framework, my partner and I were able to create a sharded transactional key-value store that uses **Paxos** for replication and **2PC** for multi-key updates. We implemented an Exactly-once RPC protocol on top of an asynchronous network, a primary-backup protocol, Paxos implemented with the PMMC protocol, and 2PC.

**Cornell Meetup** | Cloud Computing | ***Azure, CosmosDB, Python, WebDev*** | *Github* | *BOOM* **Aug 2022 – Dec 2022**

- 1 of 32 projects selected for BOOM 2023. My partner and I created a social media web app that allows users to create groups, chat with friends, and see where their friends are when on campus. Accounts details were obfuscated and salted.

## Organizations

**Engineering Entertainment Design Club** | *Lead Programmer & Secretary* | *Club* **Aug 2022 – Present**

- Working on a cornhole robot in Python and Arduino · Created a robot that makes cocktails · Worked on our website using HTML, CSS, JS, and Bootstrap · Managed projects and mentored all software teams, comprising of 20+ members.

**Cornell Tradition Fellowship** | *Fellow* | *Fellowship* **Aug 2020 – Present**

- Contains $< 4\%$ of all students · Keep good grades · Work and volunteer during the school year · Do 100+ hours of each.