

# MITCHELL GRAY

✉ meg346@cornell.edu   [in](#) MitchellEGray   [GitHub](#) MitchellGray100

## Education

### Cornell University, Ithaca, NY

*Bachelor's of Science, Computer Science*

Minor, Operations Research Information Engineering

**Aug 2020 – May 2024**

*Deans List: Fall 2022*

**Relevant Coursework:** 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

### 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

### Cornell University

**Aug 2022 – Present**

*Teaching Assistant / Head Proctor* | Java, Python, SQL

*Ithaca, NY*

- Fall 2023, Databases: Held office hours twice weekly · Answered online Q&A posts · Proctored exams
- Spring 2023, Object Oriented Programming: Nominated for Course Staff Excellence Award · Taught class sections · Helped students with Java assignments and topics in Office Hours & Consulting Hours · Led exam sessions · Graded
- Fall 2022, Intro Physics Lab: Helped students with Python/NumPy data analysis labs and homeworks

## Research

### ADOPT: Adaptively Optimizing Attribute Orders | [Github](#) | [VLDB](#)

**Jan 2022 – Present**

- Paper Accepted into VLDB 2023 · Created dynamic data visualizations for the ADOPT query engine using Java, D3.js, JavaFX, and GraphStream · Visualized the engine's reinforcement learning algorithm · Worked under Prof. Trummer

## Projects

### 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.

### DBMS | DB Practicum | Java, SQL, JUnit, Mockito, NIO | [Github](#)

**Aug 2022 – Dec 2022**

- My team and I created a Database Management System. The DBMS took SQL queries as input and created a logical and physical operator plan. The queries were optimized using indexes, statistics, and V-values to choose the best operators. Queries could be calculated in-memory or externally. Indexes were serialized and deserialized to/from disk.

### Egos | OS Practicum | C | [Github](#)

**Jan 2022 – May 2022**

- My team and I heavily upgraded an operating system. We made a threading and semaphore package, multi level feedback queue to schedule processes, a file write-through and write-back cache using the Clock eviction algorithm, and also implemented the FAT file system.

## Organizations

### Engineering Entertainment Design Club | Lead Programmer / Secretary | [Club](#)

**Aug 2022 – Present**

- Created a robot that makes drinks · Wrote Arduino code · Administrative tasks · Filming/Editing for club Youtube

### 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