MITCHELL GRAY

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Education

Cornell University, Ithaca, NY   **Aug 2020 – May 2024**
Bachelor's of Science, Computer Science   *Deans List: Fall 2022*
Minor, Operations Research Information Engineering

Relevant Coursework: Distributed Computing · Cloud Computing · Systems Programming · Systems Seminar · Info Networks · Databases · DB Seminar · Practicum in DB · Operating Systems · Practicum in OS · Software Testing · AI · Analysis of Algorithms · Computer System Organization · Honors Object-Oriented Design and Data Structures · Functional Programming · Discrete Structures · UNIX Tools & Scripting · Digital Logic and Computer Organization · Topics in Data Science · Optimization II · Optimization I · Tools for Operations, ML, and Data Science

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