Brian Donaghey

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Education

University of Pittsburgh Pittsburgh, PA

B.S Computer Science, Minor in Economics, CS Departmental Honors *Aug. 2021 – April 2025*

GPA: 3.60/4.0

Coursework: Data Structures and Algorithms 2, Intro to Operating Systems, Intro to Database Management Systems, Software Engineering, Programming Languages for Web Applications, Software Quality Assurance, Intro to Cloud Computing, Functional Programming, Data Science with Python

Professional Experience

Software Developer Intern May 2024 – August 2024

Federated Hermes *Pittsburgh, PA*

- Data engineered ETL pipelines by transforming data from the landing zone into refined files in an Azure Databricks environment by utilizing Python libraries such as PySpark and Pandas.
- Implemented SQL DDL and DML queries to ensure data integrity throughout the ETL process
- Developed a system for monitoring Power Bi workspace activity through manipulating large amounts of data from the enterprise data platform, ensuring real-time data collections.
- Created a variance reporting model in Power Bi for a company hackathon that was projected to save the company $95,400 a year.

Academic Experience

Data Structures and Algorithms Teaching Assistant Aug. 2024 – Present

University of Pittsburgh *Pittsburgh, PA*

- Facilitate weekly recitations and host office hours for Pitt's Data Structures and Algorithms class.
- Teach students fundamental data structures such as linked lists, binary trees, hashmaps, and graphs, helping them develop a strong foundation in algorithm analysis.

Projects

Digital Attendance System | *Google Cloud, Docker, Node.js, Javascript, HTML*

- Designed and deployed a cloud-based attendance tracking system using Google Cloud services, featuring QR code generation for attendance tracking.
- Developed RESTful APIs with Node.js and Express for database interactions and hosted them using App Engine.
- Automated a CI/CD pipeline with Cloud Build and GitHub integration, deploying the application to Cloud Run using Dockerized containers.

String Autocompletion Engine | *Java, JUnit, VisualVM, Maven*

- Implemented a DLB Trie-based predictive text system that enables autocomplete suggestions with efficient word storage and retrieval, utilizing probabilistic ranking and predictive modeling to optimize search performance.
- Developed JUnit test cases to verify core functionalities, ensuring accuracy in word insertion, retrieval, and prefix-based predictions, through unit, integration, and performance testing

Olympic Games Database Management System | *PostgreSQL, Java, JDBC*

- Created and modeled a fully functional mock database of the Olympic Games in PostgreSQL and Java utilizing constraints, triggers, and concurrency control methods to ensure data integrity and prevent SQL injections.
- Implemented SQL queries to test triggers, schema constraints, and functions, ensuring reliable database operations

Big O Calculator | *JavaScript, HTML/CSS*

- Website that analyzes and determines the Big O runtime of code blocks, providing detailed explanations for the runtime classification

Technical Skills

Languages: Java, Python, C, SQL (Postgre), JavaScript, HTML/CSS, Haskell
Frameworks: JDBC, JUnit, Mockito, Selenium, Node.js
Developer Tools: Git, Azure DevOps, Databricks, Power Bi, Linux, Google Cloud Platform, Docker, Maven, VisualVM
Libraries: pandas, NumPy, PySpark, matplotlib, scikit-learn