Brian Donaghey

610-427-9753 | briandonaghey21@gmail.com | linkedin.com/brian-donaghey/ | Personal Website

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

Data Engineer Intern May 2024 – August 2024

Federated Hermes *Pittsburgh, PA*

- Engineered ETL pipelines in Databricks, integrating with a Data Lake to transform updated files into structured JSON outputs using PySpark and Pandas, while ensuring data integrity through SQL DDL/DML queries.
- Automated ETL pipeline scheduling using BMC to ensure daily processing of updated data to minimize manual intervention and improve workflow efficiency, while leveraging Azure DevOps CI/CD pipelines for deployments.
- Developed a Power BI workspace monitoring system that analyzes large-scale enterprise data stored in Delta/JSON files, providing real-time insights into report usage and access patterns within the company.
- Created a variance reporting model in Power BI for a company hackathon that was projected to save $95,400 annually by reducing manual report analysis time and streamlining financial reporting.

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, utilizing Firestore's NoSQL capabilities for data management, and hosted the APIs on Google App Engine.
- Automated a CI/CD pipeline with Cloud Build and GitHub integration, deploying the application to Cloud Run using Dockerized containers.

Predictive Autocomplete 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.
- Applied Test-Driven Development (TDD) by writing JUnit test cases before implementation to ensure high test coverage for word insertion, retrieval, and prefix-based predictions.
- Performed performance testing to optimize memory and runtime efficiency by using VisualVM profiling

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.

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, TensorFlow