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, 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 **15+ financial data pipelines** in **Databricks** to perform **ETL** using **PySpark** and **Pandas**, transforming raw data into structured **JSON** files and ensuring data integrity with **SQL DDL/DML** queries.
- Automated **ETL pipeline** scheduling using **BMC** to ensure **daily processing** of updated data to minimize intervention and improve **workflow efficiency**, while using **Azure DevOps CI/CD** pipelines for deployments.
- Led the development of 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.
- 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.

ACADEMIC EXPERIENCE

Data Structures and Algorithms Teaching Assistant   Aug. 2024 – Present
University of Pittsburgh   *Pittsburgh, PA*
- Teach students fundamental data structures such as **linked lists**, **binary trees**, **hashmaps**, and **graphs**, helping them develop a strong foundation in **algorithm analysis**.
- Facilitate **weekly recitations** and host **office hours** for Pitt's **Data Structures and Algorithms** class.

PROJECTS

AI-Spotify Recommendation Engine ⌨ | *Python, React, Flask, OpenAI, NLP*
- Built a **Flask API** for an end-to-end AI music recommendation system using **GPT-4o** and the **Spotify API**.
- Enhanced recommendation quality through **Natural Language Processing** (**spaCy**, **TextBlob**, **NLTK**) to better interpret user queries, implementing **feedback loops** for learning, and **caching** to prevent duplicates.
- Deployed the **Flask** backend and the **React** frontend as separate services, enabling clean integration with the API.

Digital Attendance System ⌨ | *Google Cloud Platform (GCP), Docker, Node.js, Javascript, HTML*
- Designed and deployed a full-stack **cloud-based attendance tracking system** using **Google Cloud Platform**, featuring **QR code generation** for attendance tracking.
- Developed **REST 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 and deployed the application to **Cloud Run** using **Dockerized containers**.

Olympic Games Database Management System ⌨ | *PostgreSQL, Java, JDBC*
- Created and modeled a 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**.
- Wrote **SQL queries** testing **triggers**, **schema constraints**, and **functions** for reliable database transactions

TECHNICAL SKILLS

Languages: Java, Python, C, SQL (Postgre), JavaScript, HTML/CSS, Haskell
Frameworks: JDBC, JUnit, Mockito, Selenium, Node.js, Flask
Developer Tools: Git, Azure DevOps, Databricks, Power BI, Linux, Google Cloud Platform, Docker, Maven, VisualVM
Libraries: pandas, NumPy, PySpark, matplotlib, scikit-learn, React
Concepts: Unit Testing, Integration Testing, Performance Testing, Agile, TDD, SDLC, ETL, Data Lake Architecture