Graham Cobden

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EDUCATION

University of Washington   Seattle, Washington
Bachelor of Science in Computer Science   *Sept. 2023 – June 2027*
- 3.84 cumulative GPA, Deans List all quarters
- Coursework: Data Structures and Parallelism, Introduction to Algorithms, Machine Learning, Hardware/Software Interface, Systems Programming, Computer Security, Software Design and Implementation, Software Engineering

EXPERIENCE

Software Developer, Synaptech   Oct. 2023 – Present
University of Washington   *Seattle, Washington*
- Developed movement functions in Python for Arduino-based car controlled by eye movement
- Engineered a JavaScript test UI that enabled 100% faster identification of movement response errors
- Resolved a critical bug that prevented accurate detection of certain screen areas by identifying rounding errors in eye location data processing implementation, leading to a 50% improvement in eye tracking accuracy.
- Presented at the university's master's research symposium, showcasing potential future applications for disability management to over 200 attendees

Backend Developer, Insider   Dec. 2023 – June 2024
University of Washington   *Seattle, Washington*
- Led the back-end development for a website that analyzes real-time data on politician trades, exposing possible insider trading
- Created and implemented Python web-scraper and SQL ETL pipeline, sorted data with self-calibrated PnL algorithm that provided the front end with usable data
- Stepped up in organizing and leading meetings for an eight-person team after the project leader stepped down, ensuring the project's continuity and progress

CNT Hackathon   Feb. 28, 2024
University of Washington   *Seattle, Washington*
- 3D-printed custom parts for an Ultracortex "Mark IV" headset, ensuring compatibility with OpenBCI Cyton board for EEG data collection.
- Overcame hardware challenges caused by a faulty daisy module, successfully using the OpenBCI Cyton board to detect blinks and limb movements by reading brain waves
- Developed a custom Python API to process and visualize EEG data in real-time, bypassing limitations of OpenBCI's default GUI and enhancing data analysis accuracy

PROJECTS

MiniGoogle | *C, C++*   Apr. 2025
- Built a lightweight search engine from scratch using C and C++ with custom-designed hashtables and doubly linked lists
- Implemented disk-based storage using *nhtol* to persist indexed data across sessions
- Designed a ranking system to score and display links based on the frequency of query words
- Deployed a working domain serving dynamic search results from disk-backed storage

Wedding Planning App | *Typescript, React, Node*   Jun. 2024
- Developed a full-stack web application in VSCode using React components for the front end and Node.js for the back end
- Designed and implemented a user-friendly UI, managing all aspects of client-server communication
- Created features to track the number of guests, additional guest entries, and monitor dietary requirements

TECHNICAL SKILLS

Languages: Java, Python, C, C++, TypeScript, HTML/CSS, Assembly, OCaml
Frameworks and Libraries: React, Node.js, Flask, JUnit
Tools: Git, VSCode, pandas, NumPy