EDWARD CHAN

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EDUCATION

University of Maryland, College Park — College Park, MD
Bachelor of Science in Computer Science, Minor in General Business - GPA: 3.56 — *Expected May 2027*

EXPERIENCE

Software Engineering Intern — June 2025 - Present
Headway Technologies — *Milpitas, CA*
- Engineered and scaled robust data pipelines leveraging Elasticsearch, Logstash, and MS SQL to extract, transform, and load (ETL) metadata for over 10,000,000 images used in semiconductor manufacturing.
- Built a C# log monitoring service to parse Logstash logs and send real-time alerts, cutting incident response time by 50%.
- Developed an internal file search tool using React and Elasticsearch, enabling fast, precise retrieval of semiconductor image metadata and saving R&D teams over 50 hours of manual lookup time per quarter.
- Created a multithreaded C# application and Python scripts to automate file traversal, metadata extraction, and ingestion.

Software Development Intern — October 2024 – January 2025
Umee — *Remote*
- Developed backend user authentication system using AWS Amplify and Cognito, ensuring secure and seamless access for users in a Flutter-based social media application.
- Cut application load time and redundant API calls by 30% by implementing session-based caching via BLoC and GraphQL.
- Used AWS Lambda to generate pre-signed S3 URLs for secure file uploads, offloading transfers from the backend.
- Contributed in an Agile environment via stand-ups and retrospectives to enhance team communication and workflow.

Data Analyst Intern — January 2024 – May 2024
Internal Revenue Service — *Washington, D.C.*
- Cleaned and normalized taxpayer data for over 60,000 individuals using SQL Server, ensuring consistency and accuracy.
- Automated Power BI dashboards, reducing audit team data prep time by 30% and improving discrepancy detection.
- Maintained 500+ intern records in SharePoint, ensuring data accuracy, consistency, and efficient access for HR teams.

PROJECTS

InterviewLab.dev ⧉ | *Golang, Python, React, Redis, PostgreSQL, WebSockets, OpenAI API, FastAPI, Docker*
- Developed a CoderPad-style mock interview platform with AI-driven code assistance and in-browser execution, containerized with Docker and deployed on AWS ECS serving 800+ all-time users.
- Built a collaborative code editor in Go using Gorilla WebSocket and Redis Pub/Sub for real-time multi-user editing.
- Implemented a scalable file storage system with PostgreSQL for persistence, Redis for caching and a REST API in Go to manage client connections, request routing, and stateful codefile operations.
- Engineered a FastAPI GPT-4o microservice on AWS Lambda to generate real-time coding hints via OpenAI API.

RAG-Powered Study Assistant | *Python, FastAPI, LangChain, Ollama, FAISS, Hugging Face Transformers*
- Built a CLI tool that answers natural language questions using a Retrieval-Augmented Generation (RAG) pipeline over embedded PDF lecture notes.
- Parsed and chunked dozens of class PDFs with PyMuPDF; generated semantic embeddings using Hugging Face transformers and indexed them in FAISS for fast vector search.
- Used LangChain to route top-k context to a locally hosted LLM via Ollama; served responses through a FastAPI backend.

TerpBites.net ⧉ | *Python, Typescript, React, MySQL, Flask, HTML/CSS, AWS Lambda*
- Developed a full-stack web app using React and Flask to deliver real-time nutritional data from the University of Maryland Dining Services, serving 100+ active users.
- Scraped and normalized dining data with BeautifulSoup using cron jobs for automated updates; stored data in RDS MySQL and built a dynamic search feature powered by a Flask API on AWS Lambda for fast, queryable access.

TECHNICAL SKILLS

Languages: Python, Golang, TypeScript, Java, JavaScript, C#, C, SQL, HTML/CSS, OCaml, Rust, Swift
Frameworks & Tools: React, Flask, Node.js, Pandas, NumPy, Selenium, BeautifulSoup, SwiftUI, Flutter SDK, Git, Elasticsearch, WebSockets, GitHub, VSCode, Eclipse, IntelliJ, Figma, Notion
Databases & Cloud: MySQL, PostgreSQL, MongoDB, Redis, AWS (S3, RDS, EC2, Lambda, DynamoDB, ECS)