

# EDWARD CHAN

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## EDUCATION

### University of Maryland, College Park

Bachelor of Science in Computer Science, Minor in General Business - GPA: 3.56

College Park, MD

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/Libraries:** React, Redux, FastAPI, Express, Flask, Node.js, Next.js, Pandas, NumPy, Tailwind CSS, Selenium, BeautifulSoup, SwiftUI, Flutter SDK

**Tools & Technologies:** Git, GitHub, VSCode, Eclipse, IntelliJ, Figma, Notion, WebSockets, Elasticsearch

**Databases & Cloud:** MySQL, PostgreSQL, MongoDB, Redis, AWS (S3, RDS, EC2, Lambda, DynamoDB, ECS)