

RYAN PHAM

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Education

Georgia State University

B.S. in Computer Science

Expected Graduation Date: May 2026

GPA: 4.1

Experience

New England Investment Consulting Group

May 2025 - August 2025

Software Development Intern

Remote

- Led a team of 4 interns to refactor the Mind Map system, implementing multi-map management, parent/child hierarchies, and dynamic node types backed by a scalable **MongoDB** schema.
- Engineered real-time collaboration between multiple users, allowing synchronized edits on 97+ mind maps with persistence to **MongoDB** using **Yjs** and **WebSocket**.
- Developed 10+ production features using **Material UI**, including a new rich text editor component, a timeline-synced progress bar, and enhanced image preview & PDF export, improving user experience across frontend and backend.

Projects

FaceIT - Attendance Taking Platform | *FastAPI, React Native, Supabase, AWS S3*

January 2026 - April 2026

- Engineered student enrollment and attendance photo uploads using **AWS S3** pre-signed URLs, enabling direct client-to-S3 uploads and eliminating backend image proxying for improved scalability.
- Developed **FastAPI** endpoints for class management and attendance reporting, enabling instructors to generate session-level attendance summaries from captured classroom images.
- Implemented authentication persistence, role-based access control, and CI-backed backend testing with **Pytest** + **GitHub Actions**, improving session reliability and preventing regression across pull requests.

Melomaniac - AI Music Analysis App | *Python, FastAPI, React, PostgreSQL*

October 2025 - April 2026

- Built and trained mood & genre classification models, achieving early-stage ~79% accuracy to deploy model inference pipeline and predictions table for UI consumption.
- Implemented ML inference endpoints and **JWT-based authentication** with **FastAPI**, enabling secure, API-driven AI orchestration workflows and user-scoped access to analysis results.
- Containerized and orchestrated the **React** frontend, **FastAPI** backend, and **PostgreSQL** using **Docker** and **Kubernetes**, deploying custom Deployment and Service YAML for multi-service coordination.
- Implemented a CI pipeline to automate builds, tests, and deployment readiness for a multi-container architecture.

DuluthEats | *Go, React, Redis, PostgreSQL, AWS EC2*

January 2026 - March 2026

- Developed a full-stack restaurant discovery platform integrating **Google Places API**, enabling cuisine-based search and location-aware recommendations.
- Designed a backend service in **Go**, combining rating & distance data to generate ranked restaurant recommendations.
- Implemented **Redis caching** to store frequently requested search results, reducing repeated external API calls and improving response latency.
- Containerized the **React** frontend, **Go** API, **PostgreSQL**, and **Redis** with **Docker** and deployed the stack on **AWS EC2** with production environment configuration.

dumpy - AI Social Memory Platform | *Python, FastAPI, React Native, Supabase, OpenAI*

November 2025

- Built a multimodal, agentic captioning pipeline using **GPT-4 Vision** during the 36-hour AI ATL Hackathon, combining metadata fusion, embeddings, and RAG-style retrieval logic.
- Designed **FastAPI** REST endpoints with batch processing capabilities, integrating **Supabase** via optimized RPC functions to generate captions per image with graceful error handling.
- Collaborated with a 4-member engineering team to deliver an end-to-end MVP in <36 hours, owning AI captioning architecture while iterating on user experience and product functionality.
- Built production-ready mobile screens with real-time data fetching, validation, and responsive UI using **Expo Router**.

Technical Skills

Languages: Python, SQL, Go, JavaScript/TypeScript, Java, C/C++, HTML, CSS

Technologies/Frameworks: React, React Native, FastAPI, Django, TailwindCSS, Material UI, WebSockets, Pytest

Cloud/Databases: AWS (S3, EC2), Docker, Kubernetes, Redis, MySQL, PostgreSQL, MongoDB, GitHub Actions

AI/ML: scikit-learn, GPT-4 Vision, Pandas, NumPy, Matplotlib, Seaborn, OpenCV