MARKO TSYMBALIUK

Phone • markotsymbaluk.com • Email • GitHub • LinkedIn

EDUCATION

GETTYSBURG COLLEGE *Jan 2023 - Dec 2026*

Bachelor of Computer Science with a minor in Economics; Major GPA: 3.72/4.0

Dean's List (2023, 2024), Presidential Scholar

SKILLS & CERTIFICATIONS

Programming Languages: Java, JavaScript, TypeScript, Python, SQL, C/C++

Frontend: HTML, CSS, React, React Native, Tailwind CSS, Electron

Backend: Node.js, Spring, Spring Boot, FastAPI, Firebase, Supabase, WebSocket

Database & Storage: PostgreSQL, MySQL, Redis

Testing & DevOps: JUnit, Jest, Git/GitHub

PROJECTS

CODECAFE - Real-Time Collaborative Coding Platform (6,000+ users) codecafe.app | GitHub | Demo Video

- Developed **CodeCafé**, a browser-based, real-time collaborative code editor designed for seamless pair programming and teaching, enhancing coding education and teamwork.
- Engineered core features including instantaneous live preview (HTML/CSS/JS), a familiar VS Code-like editing environment (Monaco Editor), and zero-setup browser accessibility.
- Implemented a custom, complex **Operational Transformation (OT)** system on both the frontend (**React/TypeScript**) and backend (**Java Spring**) to manage concurrent edits and resolve conflicts automatically, enabling a fluid, Google Docs-like collaborative experience.
- Built and deployed the full-stack application using **React, TypeScript, Zustand, Tailwind CSS**, **Java Spring Boot**, **WebSockets**, **Redis (AWS ElastiCache w/ Lua)**, and **AWS (EC2, Vercel)**

DERMAFYR - YCP Hacks Best of Show Winner | Team of 4 GitHub | Demo Video

- Built as part of a team of four, **Dermafyr** is a dual-platform AI-powered skincare analysis system that enables users to receive real-time skin condition assessments and personalized routines either from home or in-store kiosks (e.g., CVS, Walmart).
- Assisted in the integration of a **TensorFlow-based image analysis model**, trained via transfer learning to identify various skin conditions. Focused primarily on **connecting the AI model to the full-stack system**, handling the integration between the **Python FastAPI backend** and the **React/Electron frontend** to deliver real-time predictions, product suggestions, and dynamic recommendations.
- Helped deploy the model to run efficiently on **Raspberry Pi 5** for offline kiosk use and integrated a **Llama model** to support fully private, local analysis. Added **Google OAuth** and **Auth0** for secure authentication and implemented the **Gemini API** for AI-powered skincare and dietary guidance.

RELEVANT EXPERIENCE

Gettysburg College - Computer Science Teaching Assistant (TA) Fall 2023 – Spring 2024

- Assisted students with Python programming, improving grades by **25%** through review sessions and one-on-one help.
- Improved understanding of **Object-Oriented Programming (OOP)**, boosting assignment and project completion.
- Supported course management and student engagement, leading to positive feedback from **95%** of students.