Isaiah Flager-Hearan

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EDUCATION

Southern Illinois University Edwardsville **Dec 2024**

Bachelor of Science, Computer Science *Edwardsville, Illinois*

SKILLS

- **Programming Languages**: Python, Java, JavaScript, TypeScript, C++, PHP, C#
- **Frontend Frameworks**: React.js, React Native, Next.js
- **Backend Frameworks**: Node.js, Flask, Django, FastAPI, Java Spring, PyTorch, NumPy
- **Testing Frameworks**: Selenium, PyTest, JUnit
- **Databases**: MySQL, PostgreSQL, MongoDB
- **Developer Tools**: Visual Studio Code, PyCharm, Git, GitHub, Linux (Ubuntu)
- **Cloud & DevOps**: AWS, Supabase, Docker, Kubernetes, Jenkins, DigitalOcean, Nginx, GitHub Actions, Sentry
- **APIs & Integrations**: Rest APIs, Stripe API, Claude API, OpenAI API, OAuth

WORK EXPERIENCE

National Great Rivers Research and Education Center **Jun 2024 - Aug 2024**

Software Engineer Intern *Alton, Illinois*

- Collaborated with a cross-functional team of 4 developers to build a responsive web application for visualizing real-time water monitoring data across 3 states (Illinois, Missouri, Wisconsin)
- Designed and implemented an optimized PostgreSQL database architecture for real-time water quality visualization and long-term scientific data storage, improving query performance by 20%
- Built a user-friendly data administration tool in Python, enabling non-technical scientists to manage database content independently without SQL knowledge
- Led code reviews and implemented agile development practices, maintaining high code quality standards and improving team development velocity
- Deployed full-stack application on DigitalOcean with scalable infrastructure, ensuring 99.9% uptime for critical environmental monitoring
- Developed responsive frontend using React.js, Next.js, and Tailwind CSS with interactive Leaflet.js maps for enhanced geospatial data visualization
- Integrated into real-time data pipelines for continuous monitoring station updates and scientific reporting workflows

PROJECTS

Steam Price Tracker | https://steampricetracker.com **May 2025 - Present**

- Developed a RESTful API with FastAPI to allow users to track Steam game prices and receive historical price changes using scheduled jobs
- Implemented AI-powered game recommendation system using OpenAI's GPT-4.1-nano model, providing personalized Steam game suggestions based on user preferences or tracked games with structured JSON responses including reasoning, rationale, and genre classifications
- Built a React/TypeScript frontend with responsive design, user authentication, and real-time game search functionality
- Integrated Supabase for authentication and database management (PostgreSQL); implemented hybrid JWT authentication system supporting both Bearer tokens and HttpOnly cookies for enhanced security against XSS attacks
- Designed a notification system that emails users on price drops via Mailjet, logging historical data in PostgreSQL with custom alert types (percentage discounts, price drops)
- Implemented Stripe payment integration with donation system featuring secure payment processing, automatic receipt generation, and flexible authentication for both web and API access
- Integrated Sentry for full-stack application monitoring with error tracking, performance profiling, session replay, and distributed tracing across frontend, backend, and external API calls
- Deployed production-ready backend on AWS EC2 using Nginx reverse proxy, HTTPS, and Cloudflare-managed DNS, receiving 2K+ monthly unique visitors tracked via Cloudflare analytics
- Implemented background jobs using APScheduler, syncing latest prices and updating the database automatically every hour.
- Live API: api.steampricetracker.com Docs: api.steampricetracker.com/docs

Quick Ship | https://quick-ship-delta.vercel.app/ **Jul 2024 - Aug 2024**

- Built complete e-commerce application using Next.js with TypeScript featuring product catalog, search functionality, and paginated browsing

- Implemented secure Google OAuth authentication with NextAuth.js including session management and anonymous cart merging upon user login
- Integrated Stripe payment processing with secure checkout sessions, implementing test environment for safe payment demonstration and automatic cart clearing upon successful transactions
- Designed and deployed MongoDB database with Prisma ORM, featuring optimized relational schema for products, carts, users, and authentication sessions
- Developed sophisticated shopping cart system with persistent storage for both authenticated and anonymous users, including real-time cart synchronization
- Created responsive UI components using React and Tailwind CSS with server-side rendering and dynamic routing
- Technologies: TypeScript, React.js, Next.js, MongoDB, Prisma ORM, NextAuth.js, Tailwind CSS, Stripe API

Video Game Search | GitHub **Jan 2025 - Feb 2025**

- Built a full-stack web application with React frontend and Flask backend enabling real-time video game search using the IGDB API
- Developed secure API wrapper with OAuth2 authentication flow to Twitch/IGDB services, implementing proper token management and error handling
- Architected RESTful API endpoints with comprehensive error handling, request validation, and structured JSON responses
- Implemented CORS configuration for cross-origin requests between React (Vite) frontend and Flask backend with specific domain whitelisting
- Containerized application using Docker and Docker Compose for consistent deployment across environments
- Designed responsive UI with Tailwind CSS featuring loading states, error handling, and dynamic game data rendering with release dates and summaries

Genomic Analysis Project | GitHub **Jan 2024 - Apr 2024**

- Implemented custom AlexNet CNN architecture using PyTorch for genomic sequence classification with 1D convolutions optimized for DNA data
- Developed one-hot encoding pipeline to convert nucleotide sequences (A, C, G, T) into numerical tensors for deep learning processing
- Built end-to-end training system with custom PyTorch Dataset class to classify genomic sequences across 10 different categories
- Achieved real-time genomic variant analysis with CUDA acceleration and cross-entropy loss optimization