

# Adam Valade

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## EDUCATION

### University of Michigan — B.S. Computer Science

Expected 2026

**Relevant Coursework:** Data Structures & Algorithms, Software Engineering, Web Systems, Database Systems

## TECHNICAL SKILLS

**Languages:** C++, Python, JavaScript/TypeScript, SQL, Bash

**Backend:** Node.js, Express, Flask, REST APIs

**Frontend:** React, HTML, CSS, Tailwind, DOM manipulation

**Databases:** PostgreSQL, MongoDB, Redis

**DevOps/Tools:** Git, Docker, Heroku, AWS, Postman

**Strengths:** Algorithms, Data Structures, Performance Optimization, Debugging

## EXPERIENCE

### Data Operations Intern

Alta Vista Technology

2023–Present

- Managed and configured CRM workflows to automate repetitive tasks and improve internal data accuracy.
- Used CRM reporting and validation tools to clean inconsistent or duplicate customer records.
- Assisted with integrating CRM data into downstream financial platforms through pre-built connectors and API-based syncs.
- Supported troubleshooting for internal users, documenting issues and improving internal technical notes.

### Developer

Michigan Build & Launch

2024–Present

- Built modular React components and dynamic page-builder tools for a Weebly-style site creator.
- Implemented backend logic for user authentication, data persistence, and RESTful API routes.
- Contributing to architecture planning and sprint execution in a 6-person engineering team.
- Participated in sprint planning to scope features and break down engineering tasks.

## PROJECTS

### Chess Engine — C++ / Python / JavaScript / REST API

**Live Demo:** megatronchess.com

- Implemented optimized move generation in C++ using bitboards, exposed to Python via *ctypes* bindings.
- Built engine logic in Python, including game state handling, search routines, and evaluation functions.
- Developed a JavaScript frontend with draggable pieces, move validation, and board animations using HTML/CSS.
- Integrated the frontend with a Python backend through a REST API that exchanged JSON move data.
- Deployed the full system to Heroku, configuring the backend and frontend for live gameplay.

### Distributed Search Engine (MapReduce) — Python

- Implemented Map, Shuffle, and Reduce phases to process thousands of documents.
- Built an inverted index, tokenization pipeline, and ranked retrieval API.
- Optimized worker scheduling to reduce total processing time.

### Music Review App (In Progress) — React / Flask / PostgreSQL

- Designing a full-stack web application where users log albums, rate music, and follow friends.
- Implementing user authentication, profile pages, album logging workflows, and a scalable PostgreSQL schema.
- Building REST API routes for reviews, album search, and personalized recommendations.
- Building a personalized recommender using vector-based similarity between user listening profiles.

### Chore Director — Python

- Automated weekly chore assignments with a Python script that emailed tasks using SMTP.
- Tracked and updated rotation state using a local index file with modular arithmetic.
- Scheduled the script on macOS with a cron job for fully automated operation.