Alexander Watts
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EDUCATION

University of Michigan **Ann Arbor, MI**
Bachelor of Science in Computer Science *April 2023*
GPA: 3.56 / 4.00
Coursework: Data Structures & Algorithms, Operating Systems, Web Systems, Intr. Computer Security, Foundations of Computer Science Theory, Intr. Artificial Intelligence, Conversational AI, Intr. Computer Organization

SKILLS

Languages: TypeScript, C/C++, Python
Technologies: Next.js, Postgres/Prisma, Docker, FFmpeg, AWS (CDK, Lambda, S3, Cloudfront, RDS, EC2, ECR, ECS, SQS), Auth, Stripe, Microcontrollers, Micropython, RaspberryPi, Tailwind, ReactThreeFiber

WORK

Memory Labs, *Co-Founder* *Full Time: Nov 2024 - Present, Part Time: Nov 2023 - Nov 2024*

- Built an AI SaaS platform that automates workflows for home photo and video digitization businesses, featuring a custom Dockerized Lambda processing pipeline that performs scene detection, autocropping, autorotation, deduplication, transcription, and datetime/location metadata inference on scanned photos & videos.
- Generated profit digitizing tens of thousands of photos and hundreds of videos for B2C operation. Conducted dozens of B2B sales calls and attended industry conferences to guide software development roadmap.
- Engineered a responsive web dashboard, leveraging the Next.js cache and CloudFront signed cookies to deliver downsized image and HLS video copies, enabling business owners to quickly view and manage gigabytes of uploaded content.
- Integrated Google Drive, Google Photos, Dropbox, and Apple Photos for seamless file uploads and downloads.

Grab Labs, *SWE* *May 2023 - November 2024*

- Alongside a team built a consumer application for StabilityAI's video generation model, using Next.js, Prisma Postgres, S3 and Cloudfront, where users can generate videos from text & photo, view history, & vote on results.
- Built full-stack internal beta for Chatalyst, a Twitch streamer tool that leverages fine-tuned LLMs to analyze chat interactions and streamer transcriptions, generating content suggestions to boost viewer engagement and subs.
- Spearheaded research & adoption of ComfyUI & KohyaSS for hosted Enterprise inference + fine-tuning product.
- Developed internal React, Node, GraphQL, and Firebase tool empowering non-technical team members to record Twitch streams, curate training sets, and fine tune LLMs, bolstering company-wide AI proficiency.

PROJECTS

Electric Dev Tools, *Creator* *November 2024 - Present*

- Built fully managed and serverless S3 FFmpeg API, using Next.js, Prisma, Lambda, Docker, Clerk Auth & Stripe, providing developers with turn-key FFmpeg functionality, async/sync invocation, webhooks, logging, and a status dashboard without the need to deploy lower level infrastructure.
- Developed an instant, dynamic zip download solution using Google Cloudrun that constructs and streams zip files directly to the client based on a set of predefined target files specified by the application. This eliminates the need to create, store and manage zip files.

Watts In The Box, *Side Project* *July 2023 - August 2023*

- Inspired by James Turrell's artwork, built an interactive IoT light fixture that dynamically responds to sound, motion, and touch using a microcontroller, light strip, microphone, accelerometer, and motion detector.
- Provided consistent product updates via Instagram and participation in BuildSpace Season 4.

Thread Library + Process Memory Manager, *School Project* *October 2022*

- Implemented C++ thread library and process memory manager, integrating mutex, cv, and threads for synchronized execution. Designed a kernel pager for efficient memory and disk space management.

CPU + Cache Simulator, *School Project* *November 2021*

- Developed a C program for a 32-bit RISC language, incorporating a versatile simulated cache with set, full, or direct-mapping and LRU eviction for efficient CPU, cache and memory data transfer.