Ben Zhou

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TECHNICAL SKILLS

Languages: TypeScript, JavaScript, HTML, CSS, C++, C, Python, Java, SQL, GraphQL
Technologies: Next.js, React, Vite, Flask, Mongo, Redis, Tailwind, SQLite, MySQL, Express, Sequelize, Matplotlib
Development: Git, GCP, Oracle, Cloudflare, Linux, Firebase, Vercel, Vitest, Jest, ESLint, Docker

EXPERIENCE

Software Engineering Intern   Jan 2025 – Apr 2025
Fuego.io   *San Francisco, California*
  - Optimized core AI generation features by developing custom architecture, accelerating response times to be **17.7x faster (15.4s → 0.87s avg)**, reducing token usage and slashing costs by similar margins.
  - Created a dashboard to log, render, sort and debug **1,000+** AI conversations, adding tagging and statistic cards.
  - Wrote **120 Jest/Vitest tests (100% branch cov.)** for timezone & metafield logic, eliminating recurring bugs.
  - Implemented ESLint, and resolved **200+** production warnings and errors to enhance code quality.
  - Built **audience segmentation** features, enabling targeted notifications for brands reaching **millions** of users.
  - Wrote currency conversion logic with constant metadata updates via a cron scheduling script using **GraphQL**.
  - Updated UI components for analytics, allowing **advanced date comparisons** with shareable URLs.

Software Developer   May 2025 – Present
WAT.ai - AI Sentiment Pulse   *Waterloo, Ontario*
  - Created a webscraper using **Python** to extract and score **100+** articles on Yahoo News for overall sentiments.
  - Deployed a **Streamlit dashboard** to test queries & view reports/graphs on articles using **Matplotlib**.

Software Developer Co-op Student   Feb 2024 – Jul 2024
SAP Toronto   *Toronto, Ontario*
  - Created a worker to handle and sanitize **GPT-4o** requests using **TypeScript** reducing request errors by **23%**.
  - Wrote comprehensive unit tests using Vitest to achieve **100% coverage** of request worker.
  - Wrote scripts in **Python** and **Node** to clean **248,000** records, updated schema to accelerate processing by **26%**.

FullStack Developer Lead   Nov 2023 – May 2024
EurekaHacks 2024   *Oakville, Ontario*
  - Improved page load times by **160%**, and reduced LCP, leading to **3,800+ impressions** and **1,100+ clicks**.
  - Led a team to build a modern, responsive website using **Next.js**, secured a max event capacity of **300+ sign-ups**.

PROJECTS

GooseontheLoose - HackTheNorth '24 Winner | GitHub | *Next, Mongo, TypeScript*
  - Designed an API in **TypeScript** to classify and recognize Canadian geese with over **95%** accuracy.
  - Integrated Google Maps API with **MongoDB** to store geolocational data for accurate real-time tracking.

bTagScript Lang | GitHub | Project | *Flask, Python, HTML/CSS, JavaScript, MySQL*
  - Designed a **RESTful Flask API** to run sandboxed programs, logging runtime data through **MySQL**.
  - Processed **15,270+ programs**, and recently migrated to a new host to ensure **99.98%** uptime for all users.

Tag Vault | GitHub | Project | *TypeScript, Mongo, Next.js, Tailwind*
  - Deployed a scraper to monitor over **2 million scripts** and archive an additional **35,900+** user-uploaded scripts.
  - Built a search, filter, and favorites module with OAuth SSO, enabling **100 % authenticated access**.
  - Implemented a time-based cache system to lower API requests by over **90%** and improving fetch time by **3s**.

Spotify Macrokeyboard | GitHub | Project | *C++, TypeScript*
  - Implemented an API in **TypeScript** to handle Spotify states and retrieve currently playing music.
  - Rewrote a library in **C++** to accelerate API requests & processing by over **750% (15s → 2s)**.

UniPlanner - 1st Place @HDSBHacks 2023 | GitHub | *Next.js, Prisma, Tailwind, TypeScript, Mongo*
  - Built a full-stack academic planner enabling students to track university applications and timelines.
  - Implemented secure authentication using **JWTs** and third-party OAuth providers to streamline onboarding.

EDUCATION

University of Waterloo   Sep 2024 – Apr 2029
Candidate for BASc in Computer Engineering, Honours, In Excellent Standing with Distinction   *Waterloo, Ontario*