

Miller Ding

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EDUCATION

University of Ottawa

B.Sc in Computer Science, with a Minor in Economics, CO-OP. CGPA: 9.2

Ottawa, Ontario

2023-09-01 - 2027-05-01

TECHNICAL SKILLS

Languages and Frameworks: Java, Spring, Python, Flask, TypeScript, JavaScript, React, Next.js, Tailwind, Framer Motion, SQL, MySQL, SQLite, MyBatis, Docker, HikariCP, Puppeteer, Folium, Pandas

Developer Tools: Git, Gitlab, Maven, Postman, Gemini API, OpenAI, Solace EDA, Figma, DBeaver, NeoVIM, Gunicorn

Skills: Spring MVC, JWT/OAuth, DevOps, CI/CD, UI/UX design, LLM MCP Design, Prompt Engineering, Adobe Suite (Photoshop, Premiere, After Effects), Cloud Infrastructure (AWS EC2, Alibaba ECS), Server Networking (Nginx, Cloudflare Tunnels), Linux (Debian, Ubuntu), Search Engine Optimization, SERP

EXPERIENCE

AI/LLM Model Development Research Assistant Co-op

2025-05-01 - Present

University of Ottawa Faculty of Social Sciences and Economics

- Implemented AI models using Google Gemini API for web research, online media information extraction, reasoning, semantic similarity analysis, and geospatial identification of political protest events.
- Developed scripts in Python using pandas dataframes and Google Cloud BigQuery to query through 8.14 TB of GDELT event data for protest and conflict event analysis using Gemini.
- Built MCP servers for AI research agents to search online archives and media sources, process and extract data from documents, compare distances to points of interest using ArcGIS, and display data in a Python Folium map.
- Created a SERP API client for search agents to perform web research based on a specified search methodology, to assist with protest event analysis research of geopolitical conflicts.
- Designed a geospatial tagging algorithm using GeoPY and OpenStreetMap to search for closest amenities from locations based on latitude and longitude.
- Implemented a frontend web application dashboard using React to manage research projects, along with user accounts, data analysis, and web research.

Software Engineer Internship

2024-04-30 - 2024-08-15

Jinglembi Technology Co. Inc.

- Led the design and supported the implementation of two mobile apps leveraging open-source AI generative image and video software for entertainment and productivity.
- Wrote RESTful APIs with Java Spring Boot for backend video generation and mapping user-generated videos in our cloud MySQL database. Implemented Base64 encoding for generated videos for compatibility.
- Developed a scalable queuing system with multiple thread-safe queues to enhance the productivity of our video generation services, streamlining workflows and improving our cloud server's efficiency.

PROJECTS

servera.dev | *Java Spring, Python Flask, Next.js, Tailwind, Cloudflare, Nginx, SQLite3, Stripe API* 2025-03-01 - Present

- Servera.dev is a full-stack software development SaaS that creates, builds, and deploys users' backend and frontend servers with AI, and provides users with a designated endpoint to use in their own applications using Gemini 2.5 Flash
- Servera is self hosted on a Linux server and creates unique docker instances for each user's full-stack application.
- Designed a Spring gateway proxy to forward obfuscated URLs to each server through a mapper with caching
- Generates a complete visual backend model with a graphical interface by compiling full AST trees
- One-click integration for custom agentic AI models based on user-defined system prompts and parseable return formats
- Dynamic SQLite3 databases and schemas for each instance based on user request, with AI generated models
- User-friendly UI design with a chat input to assist users with developing their own applications.

Focusify - uOttHack 7 (Starknet) Winner | *React, Next.js, Cairo-lang, Ethereum Smart Contracts*

2025-01-15

- Focusify is an event-based competition hosting platform based on the Starknet platform using Ethereum smart contracts
- Cairo scripting language was used to build and deploy contracts onto the blockchain, and Next.js was used as the frontend

Ciena Challenge - 2024 Hack the Hill Winner | *Java, Python, Docker, React, Next.js*

2024-10-01

- Implemented the backend and frontend for a decentralized P2P file sharing application by distributing file chunks
- Used Spring Boot and SSH tunnels to interact with other servers, and a middleman to act as a DNS server

Holo AI (iOS and Android) | *Java Spring, JWT, Flutter, Dart, MyBatis, Redis*

2024-05-01 - 2024-08-20

- Holo AI is a mobile app built by Jinglembi for productivity and entertainment, using AI text-to-video and image
- Worked on building the backend infrastructure, handling large concurrent mobile users with efficient queuing, and UI