Tanvir Sarao

tanvirsarao.com

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Technical Skills

Languages: Python, JavaScript, TypeScript, HTML, CSS, C, Racket
Technologies: MySQL, PostgreSQL, Django, MongoDB, Mongoose, Express, Node, Next, React, Tailwind
Developer Tools: Git, Amazon Web Services, Linux, Jupyter Notebook, VS Code, Figma, Postman, SDLC, CI/CD

Education

University of Waterloo — Waterloo, ON
*BCFM, Double Major in **Computer Science & Finance** (Co-op)* — *Expected April 2029*

Experience

Artificial Intelligence Optimization Engineer — January 2025 – Present
Arnii Fitness — *Vancouver, BC*

- Engineering AI for personalized fitness insights, delivering real-time recommendations to **3,000+ users**. Integrating Supabase AI vectors, RAG resources and Buildship's OpenAI stream to improve accuracy and reduce costs

Software Engineer — November 2024 – Present
Hackathons Canada — *Waterloo, ON*

- Collaborated with a team of **5+ engineers** to build Canada's largest hackathon community of **2,400+ hackers**
- Engineered **GeoDjango** integration within the database to store & manage geospatial data, including hackathon locations as lat-long coordinates using **PostgreSQL** for **50+ upcoming hackathons**
- Designed & deployed filtering endpoints using **MVC architecture** to retrieve hackathons within the user's specified distance, ensuring **schema consistency** & integrating with a **CI/CD pipeline** to streamline updates

Software Engineer — August 2024 – October 2024
AgentEdge Inc — *Brampton, ON*

- Collaborated with lead engineers to support a **CRM/CMS** platform for **20+** real estate professionals in Canada
- Programmed role-based access & user session management systems using **JWT tokens & bcrypt**, while developing **RESTful API** endpoints with **Node** & **Express** that served content to over **85,000 annual visitors**
- Architected efficient **CRUD** operations for blogging & testimonial features using **MySQL** & **MongoDB**, implementing **MVC** practices to reduce code redundancy **by 50%** & **optimize** delivery speed **by 30%**

Projects

tanvirsarao.com | *Next, React, Tailwind, Typescript, Ubuntu Web Server*

- Built a portfolio using **Next, React and Tailwind**, deployed on **Ubuntu** with **PM2** and **Apache** reverse proxy

Talk to a Therapist | *TypeScript, Next, React, TailwindCSS, Node, Google Cloud, OpenAI*

- Built an AI-powered mental health platform with personalized, secure therapy. Integrated user-defined therapist traits, speech-to-text, **Google Cloud voices** and **OpenAI** for lifelike, empathetic interactions

TanVentures | *HTML, CSS, Pug, Node.js, Express.js, MongoDB, Mongoose.js, Nodemailer*

- Developed an online tour marketplace using a RESTful API, **server-side** rendered frontend with **Pug** templating and pagination integrated with **Nodemailer** & developed unhandled rejection & **SIGTERM** responses

AI Financial Portfolio Advisor – 3rd Winner | *Python, PyTorch, Pandas, NumPy*

- Developed a market-meet robo-advisor utilizing LSTM **neural network** with 30 hidden units & MinMaxScaler normalization, while maintaining optimal Sharpe ratios, achieving **88.32%** of market benchmark performance
- Implemented statistical arbitrage strategy by engineering **multi-threaded** Monte Carlo simulation with **10,000** concurrent iterations, handling real-time currency conversions & minimizing broker fees across a $1M portfolio

TripIncento | *MySQL, Node, Express, AWS, Linux*

- Built **RESTful API architecture** integrating user rewards system with **local businesses** in my hometown
- Implemented **CORS** exceptions, **HTTPS** protocol, **JWT** authentication with password encryption, engineered responsive front-end with HTML/CSS & deployed on an **AWS EC2** instance in Linux

Doctors on Blockchain – JamHacks 8 Winner | *Python, MySQL, MATLAB, NEAR*

- Utilized **CNN deep learning** model using Python, achieving 85% accuracy in early cancer detection from microscopic tissue images, reducing diagnosis time from weeks to seconds & improving patient outcomes