MATTHEW TSENG

(236) 777-8991 | mthwtsng@gmail.com | Linkedin | Github

EDUCATION

Simon Fraser University   Burnaby, BC
Bachelor of Science in Computing Science, 3rd year   *Expected Grad: 2026*

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, SQL, R, HTML/CSS, C, C++

Frameworks/Tools: Spring Boot, React, Pandas, NumPy, SciPy, Next.js, PostgreSQL, MongoDB, SQLite, Tkinter, JUnit, Postman, Git, Matplotlib, Seaborn

PROJECTS

AI Trading Simulation | *Python, Pandas, Numpy, Scikit-learn, Matplotlib*   Mar 2025 – Present
- Developing a trading simulation that predicts stock price movements using machine learning models (SVM, Random Forest, Logistic Regression), processing 500+ daily data points.
- Built a feature pipeline with technical indicators and lagged returns, implementing forward-fill preprocessing to handle NA values

Trading Interface | *Python, Pandas, Tkinter, IBKR API*   Feb 2025 – April 2025
- Built a responsive GUI that processes market data points for real-time visualization and trade execution, using IB-insync and yfinance APIs.
- Reduced market data latency through optimized event-driven callbacks, ensuring reliable UI updates.
- Implemented non-blocking IBKR API calls using asyncio and ibinsync to handle concurrent market data streams.

Gait Analysis System | *Python, Pandas, SciPy, Matplotlib, Seaborn*   Jan – Mar 2025
- Built a scalable data processing pipeline that analyzed 100,000+ accelerometer data points, using custom Butterworth filters and FFT algorithms
- Designed interactive visualizations with Matplotlib and Seaborn that revealed undetected asymmetry patterns.
- Enhanced signal processing performance by leveraging SciPy's optimized numerical routines.

Sports Forum Website | *Java, Spring Boot, React.js, JUnit, PostgreSQL*   Mar – Sept 2024
- Built a full-stack sports discussion platform with Spring Boot and React.js, supporting user auth and live threads.
- Normalized PostgreSQL database schema and optimized indexing to support efficient queries on large datasets.
- Implemented unit testing with JUnit to ensure backend stability and authentication reliability.

ChildHelp Inventory Management | *Java, HTML, CSS, JavaScript, Spring Boot, PostgreSQL*   Jan – Mar 2024
- Worked in a 5-person Agile team to build a Spring Boot donation inventory system for a nonprofit organization.
- Implemented secure user login, session handling, and CRUD operations on a PostgreSQL-backed inventory system.
- Developed a responsive, user-friendly frontend with HTML/CSS and JavaScript.

VOLUNTEER EXPERIENCE

Website Developer   Feb 2025 - Present
The Church in Burnaby   *Burnaby, BC*
- Developing a responsive website using React.js, Next.js, and Tailwind CSS to improve outreach and content accessibility.
- Collaborating with partners to gather requirements and implement SEO practice