Wyatt Verchere

Website: www.wyattverchere.com
Github: github.com/thesuzerain
Email: wverchere@gmail.com
Mobile: +1-778-838-3230

Experience

- **Vybe Network** — Vancouver
  Software Engineer — *March 2024 -*
  - Collaborated to develop high-performance APIs and WebSocket services using Rust (Actix Web) and Python (FastAPI), with Clickhouse and Redis backends, delivering real-time customer-relevant and useful financial insights with millisecond-level latency for over 500 million records.
  - Owned and implemented a high-throughput data ingestion pipeline into a PostgreSQL database, using Kafka and Rust, processing over 10,000 account update messages upserts per second, ensuring millisecond-level synchronization between Solana account updates and their availability in customer-relevant aggregations.
  - Developed backend for a novel well-received 'Snipe game', providing subsecond latency websockets of accurate pricing information allowing immediate actionable insights by players or traders.
  - Designed and developed data pipelines in Apache Airflow to supplement data with prices and complex aggregate values.
  - Co-led backend team in a fast-paced environment, taking initiative to design and implement novel features well-received by our customers.

- **Modrinth** — Vancouver (Remote)
  Founding Software Developer — *Feb 2023 - March 2024*
  - Co-led development of a modern and performant modded Minecraft launcher using Rust and Vue.js (Tauri), releasing and growing to 180k monthly average users within 6 months of launch.
  - Back-end development for Rust-based site API, using Actix and PostgreSQL. Owned and added key features in collaboration with our front-end website team to grow monthly average users by 250% (4M to 14M) over the course of a year.
  - Led a full API rewrite to improve flexibility to host more games and diverse data domains, as well as improve query performance in our hottest API routes by over 3x.

- **Pacific Parkinson's Research Centre** — Vancouver
  Software Developer, Data Scientist — *June 2019 - Feb 2023*
  - Using Python, C++, and MATLAB, designed and single-handedly implemented 'games' and internal tools for millisecond-accurate data collection for studies involving EEG, MRI, galvanic vestibular stimulation and user response.
  - Using Python's TensorFlow and Keras, designed and implemented several CNN, LSTM and GAN network solutions for the augmentation of Parkinsonian EEG data and analyzing the relationship between the Parkinsonian condition to the brain, gait, sweat/electrodermal activity readings, and vigour. This work contributed to a published paper and created pipelines for future research.

- **AltumView Systems Inc.** — Vancouver
  Software Developer Internship — *Apr 2018 - Aug 2018*
  - Created and owned a Node.js-based cloud backend for a smart home camera (later called Sentinare), an Alexa and Google Assistant implementation, a PostgreSQL database, and OAuth2 login implementation.
  - Used Java with Google Assistant SDK to create a controller for an Android-based robot to enable voice control with custom hotwords and handling.

- **Roadhouse Interactive** — Vancouver
  QA & Analytics Internship — *Summers 2015-2017*
  - Designed smoke and regression tests on games for Iron Maiden, Red Bull, and Games Workshop
  - Aided with analytics collection and analysis for Iron Maiden: Legacy of the Beast

Education

- **University of British Columbia** — Vancouver, Canada
  Bachelor of Science - Computer Science — *September 2015 - May 2019*

Skills Summary

- **Languages**: Rust, Python, C++, TypeScript, JavaScript, Ruby
- **Frameworks**: Actix Web, Tauri, Django, FastAPI, Node.js, Vue.js, Svelte, TensorFlow
- **Tools**: Git, PostgreSQL, Clickhouse, Kafka, Redis, GCS, AWS, Docker

Publications & Conferences

- Mirian MS, Kazemi A, Hussain R, Lee S, Verchere WD, Ward, RK, McKeown MJ. *Galvanic vestibular stimulation effects on LSTM-based EEG neuromarkers of motor vigor in Parkinson's Disease.* Brain Stimulation 14(6):1645, 2021
- Arasteh EH, Mirian MS, Verchere WD, Surathi P, Nene D, Allahdadian S, Doo M, Park KW, Somdattaa R, McKeown MJ. *An Individualized Multi-Modal Approach for Detection of Medication "Off" Episodes in Parkinson's Disease via Wearable Sensors.* J. Pers. Med 13(2):265, 2023
- Arani KS,Vahabie A-H, Soltanian-Zadeh H, Kazemi A, Verchere WD, Lee S, Mirian MS, McKeown M. *Microstate Resting State EEG Analysis for Evaluating the Effect of Electrical Vestibular Stimulation in Parkinson's Disease.* Iranian Conference on Biomedical Engineering