Wyatt Verchere

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EDUCATION

- **University of British Columbia** — Vancouver, Canada
  Bachelor of Science - Computer Science — *September 2015 - May 2019*
  Courses: *Software Engineering, Algorithms & Data Structures, Artificial Intelligence, Machine Learning, Computer Vision*

SKILLS SUMMARY

- **Languages:** Rust, Python, C++, JavaScript, Ruby, Go
- **Frameworks:** Tokio, Actix Web, Tauri, Django, Node.js, Vue.js, TensorFlow, Keras
- **Tools:** Git, PostgresSQL, Clickhouse, AWS, Docker, Github CI/CD

EXPERIENCE

- **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) that scaled to 180k monthly average users within 6 months of launch.
  - Back-end development for Rust-based site API, using Actix and PostgreSQL. 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.
  - Co-led a full API rewrite to improve flexibility to host more games and varieties data, as well as improve query performance in our hottest API routes by over 3x.
  - Created test library from scratch that facilitated the full API rewrite as well as a smooth transition to the Axum crate.

- **Pacific Parkinson's Research Centre** — Vancouver
  Software Developer, Data Scientist — *June 2019 - Feb 2023*
  - Using Python, C++, and MATLAB, included 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*
  - Organized and created a Node.js-based cloud backend for a smart home camera (later called Sentinare), an Alexa and Google Assistant implementation, a database, and OAuth2 login implementation.
  - Used Java with Google Assistant SDK to re-implement Google Assistant onto an Android-based robot (but with custom hotword and command handling) to allow voice control of its loaded software.
  - Aided with app development for iOS/Android using Xamarin to create a prototype for a front end interface so clients could interact with specified smart home camera, and a React.js front-end for data visualization and testing.

- **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

PUBLICATIONS

- 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

CONFERENCES

- 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

PROJECTS

- **Pareto Hockey (Data Scientist, Data Engineer):** Using Rust, created a database and backend for hockey statistic analysis, and lead in development of novel valuable metrics currently in discussion of being sold to hockey data aggregators like RinkNet and EliteProspects (Nov 2022 - Jan 2023)

- **Pokémon Insurgence, (Project Lead, Game Design, Lead Programmer, Marketing):** Using RMXP/Ruby, designed, lead, and marketed an immensely successful fan-game in the Pokémon universe resulting in over 1,000,000 unique players and a large online community. (August 2015-2019)

- **Pokémon Zeta & Omicron, (Project Lead, Game Design, Lead Programmer, Marketing):** Using RMXP/Ruby, designed, lead, and marketed a successful fan-game in the Pokémon universe with over 800,000 unique players. (August '18)