Martin Woo
Vancouver, BC, Canada | +1 604.401.3722 | martin.wooo@outlook.com
Web://Martin Woo | LinkedIn://Martin Woo | Github://martinwoo7

EDUCATION

QUEEN'S UNIVERSITY — Kingston, ON
Master of Science, Computer Science - Machine Learning — Sep 2022
Cumulative GPA: 4.1/4.3
Teaching Assistant (2YoE): Algorithms (Python, Java); Web Development (JS, PHP, HTML, CSS); Cybersecurity (C)

QUEEN'S UNIVERSITY — Kingston, ON
Bachelor of Computing, Cognitive Science/Computer Science — May 2020

WORK EXPERIENCE

VANCOUVER AUDITORY VESTIBULAR CLINIC — Vancouver, BC
Software Engineer (Full-Stack) — May 2022 – Current
- Personally designed and implemented an innovative machine learning solution, in collaboration with Dr. Eytan David, to create a specialized program for accurately analyzing and treating balanced-based dizziness, leading to a 10% increase in treatment efficiency.
- Incorporated the Electron framework with a React front-end and Python back-end to formalize a standalone desktop app for suggesting parameters in a custom therapeutic protocol used daily for more than 40 patients.

QUEEN'S UNIVERSITY SCHOOL OF COMPUTING — Kingston, ON
Machine Learning Researcher — Sep 2019 – Jul 2022
- Facilitated with Dr. Farhana Zulkernine and 3 others to research and publish state-of-the-art concepts for unsupervised learning, resulting in 2 published papers (refer to 2nd page) and 2 currently submitted papers in review.
- Designed and implemented a total of 10 clustering machine learning model/data pipelines (LSTMs, AEs, CNN, and hybrid models) for time-series processing using clustering on streaming complex data using Python (TensorFlow/Keras)
- Attained state-of-the-art results (95%) while establishing novel baseline performances and balancing resource use from more than 2M points of complex streaming training data.
- Proposed and implemented 3 visualization methods for intuitive cluster analysis via Matplotlib.

QUEEN'S UNIVERSITY FRENCH DEPARTMENT — Kingston, ON
Software Engineer (Full-Stack) — May 2020 – Sep 2020
- Collaborated with Dr. Greg Lessard and 1 other to build and improve a web application (VinciLingua) currently used in 8+ Queen's University language courses and by over 500+ students.
- Engineered and upgraded HTML/Javascript framework to increase computational speed by 10% and designed and launched a streamlined modern design, in addition to implementing higher server and client-side security protocols and account validation using PHP, JavaScript, and MySQL.

ACTIVITIES

QUEEN'S HONG KONG STUDENT'S ASSOCIATION — Kingston, ON
Co-Chair, Sponsorship Director — Sep 2017 – May 2020
- Hired and delegated a student cultural club with 15 executives to create 6 events promoting the Hong Kong culture to the Queen's student community, leading to a 14% increase in memberships and 20% in profits.
- Created two websites for the club using WordPress and HTML/CSS.
- Established 18 partnerships with local businesses, facilitating discounts and a range of additional perks for all club members.

PROJECTS

SOCIAL MEDIA PLATFORM — Current
- Designed and created the system architecture and 12+ views using React Native, Firebase (NoSQL, GCP), and Google Maps API for a social media platform which connects users based on shared interests, facilitating event participation and fostering collaboration. Scalable to 10,000 users.

ADDITIONAL

Technical Skills: **(Advanced)** Python, JavaScript, MATLAB, HTML/CSS, LaTeX; (**Proficient)** Java, PHP, C
Technologies: (Python) TensorFlow, Scikit-Learn, Electron, Gatsby, Scipy, Pandas, Matplotlib; **(JavaScript)** React, React Native; **(Other)** WordPress; Git; Slack;
Awards: 2020 Graduate Fellowship/Scholarship

PUBLICATIONS

[1] Woo, M. 2022: A computational odyssey. towards a deeper understanding of clustering streaming human activity recognition data. Master's thesis, Queen's University, Kingston, ON, Canada, Sept. 2022.

[2] Woo, M., Zulkernine, F., and Abdulsalam, H. M. Clustering har data streams. In Proceedings of the 46th IEEE Annual Computers ,Software, and Applications Conference, COMPSAC 2023 (Torino, Italy, 26-30 June 2023).

[3] Woo, M., Zulkernine, F., and Abdulsalam, H. M. Clustering HAR Data Streams. Frontiers of Computer Science, 2023. [in review]