Jizhou (June) Wang

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Education

University of Montreal & **Mila** | Graduate | GPA: 3.9/4.0 **2021 - 2023**
Prof. MSc in Machine Learning

McGill University | Undergraduate **2015 - 2019**
BSc in Statistics & Computer Science

Experiences

Multi-Agent Reinforcement Learning in Space-invader|McGill University **Spring 2023**

- Directed a group project focused on the comparative analysis of various reinforcement learning algorithms including Deep Q-Network, and Proximal Policy Optimization (PPO) within a multi-agent setting, using the Atari Space-Invader environment in PettingZoo; presentation shown here.
- Conducted creative experimentation with extrinsic vs intrinsic reward functions, network hyperparameters and structure that led to the improvement of the agents' total reward. Identified potential limitations and proposed future research directions including self-supervised contrastive learning and offline-RL.

Machine Learning Researcher Intern |Humanware, Longueuil, QC **2022-2023**

- Led the development and fine-tuning of object detection models, leveraging SOTA models such as RegionCLIP to enhance detection robustness, outperforming classical object detectors in out-of-distribution scenarios.
- Implemented an Android demo application with voice guidance for the visually impaired, while also proposing recommendations for novel multimodal models for continual learning and active data collection that can adapt to changing data distributions to support long-term model robustness.

Convolution vs Attention for Image Classification|University of Montreal **2022**

- Comparatively analyzed deep vision models (ResNet, ViT, ConvNext) based on convolution or attention architectures using a proxy shape-bias metric on out-of-domain stylized samples (generated by a GAN network) to evaluate classification generalization performance; visualizations are shown here.

Hockey Goal Prediction|University of Montreal **2021**

- Performed exploratory data analysis on NHL play-by-play data by building an interactive 2D shot-heatmap using plotly and ipywidget. See blog post.
- Developed a goal prediction service on Flask with Docker using an ensemble deep learning model based on their ROC-AUC in comet.ml.

Orderly|Grace Dart Extended Care Centre (CIUSSS ODIM), Montreal, QC **2020 - 2021**

- Provided compassionate care to residents while working in teams managing their personal hygiene and daily routines, while following all safety protocols.
- Improved the mental well-being of residents by engaging in friendly social interactions, and organizing group one-on-one activities (card games, trivia, bingo, walks) while actively listening to their needs and inquiries.

Toxicity Detection in Text |McGill University **2019**

- Compared performances across different models such as CNN, LSTM, Transformers and lexical using ROC-AUC metrics for detecting toxicity while maximizing group fairness across different identity subgroups.
- Finetuned transformer models such as BERT, and GPT using word embeddings such as word2vec and GloVe.

Irrelevant.ai |ImplementAI Hackathon **2019**
https://devpost.com/software/irrelevant-ai

- Designed a movie recommendation system with a two-stage supervised learning model from Fast.ai using collaborative filtering and unsupervised K-means clustering with Scikit-learn.
- Developed a filtering algorithm that lets the user explore beyond the AI recommendation feedback loop while maintaining a positive user rating.

Web Designer | Centre Saint-Antoine 50+, Montreal, QC **2017**
http://centrestantoine50plus.org/

- Designed a minimalistic website utilizing jQuery, Bootstrap and AngularJS, resulting in a responsive interface focusing on enhancing accessibility for elderly clients by optimizing text/content size spacing and color palettes.

IT Support| Age UK, Royal Tunbridge Wells **2016**

- Aided senior clients in a compassionate manner on various IT tasks including system settings, applications, emails, etc, while recommending helpful tools to improve their autonomy around technology.
- Coordinated appointments and conducted 1-on-1 inquiry-based learning on various operating systems such as Windows, Apple and Android.

Software Engineer Intern | Microsoft, Beijing **2015**

- Maintaining web components and websites for new and existing user clients using HTML, CSS, jQuery, Bootstrap, and AngularJS.
- Prototyped “MicroFriends” a social networking app for interns on android/iOS during the Microsoft Hackathon

Expertise

Computer Science: Contrastive Reinforcement Learning, Continual Multimodal Learning.
Software: Pytorch, Gymnasium, MuJoCo, Sklearn, Github, OpenCV, Plotly, Flask, Docker.
Music: Youtube Channel, Certified Pianist (RCM), Jazz Composer, Rhythm Gamer.
Athletics: Figure Skater, Latin Dancer, Cross Country Runner, Yoga, Gymnastics.
Language: English, Mandarin (Fluent), French (DELF B2), Japanese (N3), Spanish (B1).
Interpersonal: Team Leader, Mentor, Active Listener and Communicator, Critical Thinker.