YIAN WONG

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Avid machine learning graduate student with a focus on natural language processing and reinforcement learning. Experienced in developing and deploying machine learning models using TensorFlow or PyTorch. Strong problem-solving skills and ability to communicate technical concepts to both technical and non-technical audiences.

Key Skills: Statistical Modeling, Deep Learning, Bayesian Probability, Unsupervised Learning, Clustering, Data Science, Data Analytics, Reinforcement Learning, Natural Language Processing
Programming Languages: Python, C++, Java, Scala, SQL, JavaScript
Libraries: Jax, TensorFlow, PyTorch, Keras, Pyro, NumPy, Sci-Kit Learn, Pandas, Matplotlib, PySpark

EDUCATION

The University of Texas at Austin
Master of Science, Computer Science — May 2024
Bachelor of Science, Computer Science — May 2022
Minor in Business Administration

EXPERIENCE

UT Good Systems Initiative - *Machine Learning Research Scientist;* Austin, TX — April 2022 - Present
- Developed and implemented white-box natural language processing models (NLP) using PyTorch, focusing on explainability.
- Designed and implemented scalable training framework on the TACC supercomputer for faster research and development.
- Jointly developed a white-box NLP model that outperformed BART in hatespeech detection while adding explainability.

Terra Cover - *Machine Learning Intern;* Remote — September 2021 - April 2022
- Created a Bayesian probabilistic model to predict flooding events with accurate model uncertainty.
- Prototyped physics-based architecture which reduced labeled data needed by 80% by encoding informative priors.
- Coded novel data labeling software to efficiently segment floods in satellite images, cutting time spent on labeling by 50%.

WiSilica - *Machine Learning Intern;* Irvine, CA — May 2018 - August 2018; August 2019 - June 2020
- Implemented an object detector that quickly detects people in real-time, resulting in improved efficiency and accuracy.
- Utilized wireless lighting and object detection technology to significantly reduce office energy consumption by over 50%.
- Led four interns, introducing them to the basics of machine learning development and data processing.

PROJECTS

Research Publication — Summer 2022
Yian Wong, Sau-Wai Wong *"Exploring Advanced Neural Network Architectures for Synthetic Well Log Generation"*
- Presented paper to the 2022 American Rock Mechanics Symposium, networked with geomechanics professionals.
- Implemented and surveyed state-of-the-art sequence classification methods (LSTM, MLP, Random Forests).
- Pioneered novel convolutional neural network architecture with accurate uncertainty estimation via Monte-Carlo dropout.

Reinforcement Learning in Connect Four, Personal Project — Summer 2021
- Engineered custom reinforcement learning (RL) methods to solve Connect Four through self-play using PyTorch.
- Integrated agents with Monte-Carlo tree search (MCTS) to refine predictive policies by looking ahead of the game.
- Showed that RL + MCTS achieves perfect play with 80% less future variations considered on average compared to mini-max.

TwitchMoji, Academic Project — Spring 2022
- Analyzed user sentiment by mapping chat instances to emotes used on the popular game streaming platform, Twitch.
- Evaluated transfer learning on the NLP model to achieve 6% higher accuracy on sentiment analysis tasks than a BART model.
- Concluded that twitch emotes can capture an increasingly wide range of conventional sentiment across the platform.

Interests: Chess, League of Legends, Reinforcement Learning in Video Games, Cooking
Work Eligibility: U.S. Permanent Resident (Eligible to work in the U.S. with no restrictions)