YIAN WONG

yian@cs.utexas.edu • linkedIn.com/in/yianwong • github.com/1yian

Computer science student with a passion for reinforcement learning, computer vision, and data science. Adept in probabilistic modeling, deep learning, data visualization & analysis to solve real-world business problems.

EDUCATION

The University of Texas at Austin — Bachelor of Science in Computer Science — May 2023
Minor: Business Administration
Overall GPA: 3.75

Relevant Coursework: Neural Networks, Artificial Intelligence, Stats/Probability, Linear Algebra
Data Structures, Discrete Math, Operating Systems

EXPERIENCE

Terra Cover, Inc - *Applied Machine Learning Intern;* Virtual — September 2021 - December 2021

- Implemented and tested algorithms for approximating posterior distributions of **probabilistic models** in tractable time
- Designed a **Bayesian model** based on theoretical hydrological models to predict river discharge from satellite images
- Reduced number of labels needed during training by 90% through informative prior distributions of the output

WiSilica, Inc - *Machine Learning Intern and Team Leader;* Virtual — June 2019 - July 2021

- Developed an algorithm to optimize wireless lights based on people's locations in office spaces
- **Led** and **mentored** a team of 4 high school interns to help build a computer vision training pipeline
- Supervised **model development**, **testing** & **validation** of **computer vision** system to detect people using **TensorFlow**
- Increase productivity through better office lighting, reducing energy consumption by 60%

UT Austin Texas Institute for Discovery Education in Science - *Teaching Assistant*; Austin, TX. — January 2021 - May 2021

- Teaching assistant for over 40 students in the Freshman Research Initiative Robot Learning class
- Created weekly homework assignments using **Jupyter Notebook**, **Pandas**, **Sci-Kit Learn**
- Led discussions twice a week, reviewed homework and clarified questions; guest lectured during instructor's absence

PROJECTS

Research Paper - *"Generating Synthetic Rock Acoustic Response Using Semi-Supervised Regression"* — December 2021 - Present

- Survey common regression methods in predicting acoustic waves from common petrophysical well log values
- Implement **LSTM** and 1D **convolutional neural networks** and measure their efficacy in the task
- Design Bayesian networks to model the well logs and test its effectiveness compared to deterministic methods
- Introduce semi-supervised learning methods to make use of unlabeled or incomplete well logs in training

Personal Project - *"Random and Tensorized Conditional Sum Product Networks"* — September 2021 - Present

- Evaluate a specific variation of sum product networks, a class of deep **probabilistic models** with tractable inference
- Structure values into tensors to allow for efficient parallelization on GPU during training and inference
- Implement a data-agnostic method to create the structure of sum product networks, which allows for generalized applications
- Demonstrate that the model has better out-of-domain detection and accuracy than neural networks on the MNIST dataset

Personal Project - *"ConnectFourRL"* — November 2020 - January 2021

- Implemented *'IMPALA',* a state-of-the-art **reinforcement learning** algorithm using **PyTorch** and **RLLib**
- Designed a training pipeline that allowed the agent to learn the game of Connect Four only by playing itself
- After training, the agent played the optimal move with 85% accuracy, and held 90% win rate against my friends and family
- Achieved optimal play after implementing Monte-Carlo Tree Search to allow the agent to refine its moves by looking-ahead

Collaborative Project - *"Trashberry Pi"* — January 2019 - October 2020

- Collaborated with two others to design trashcan that can sort between recycling and trash using OnShape CAD
- Trained a **computer vision image classification** model to determine whether items are recyclable or disposable
- Achieved **top 100** finalist placing in Project Paradigm Challenge, a think-tank competition with over 15,000 participants

ADDITIONAL INFORMATION

Programming Languages: *Proficient in*: Python, Java, C, C++, SQL; *Experience with*: JavaScript, R
Workplace Tools: Excel, Outlook, Slack, GitHub, Microsoft Teams, Discord
Interests: Chess, reinforcement learning in video games, computer graphics
Work Eligibility: Eligible to work in the U.S. with no restrictions