Jiuqi Wang

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Education

Sep. 2021 - Jun. 2023
Edmonton, Canada

University of Alberta
MSc. Computing Science (Thesis)
Supervisor: Martin Müller

Sep. 2017 - Jun. 2021
Montréal, Canada

McGill University
BSc. Honours Computer Science
Distinction, First-Class Honours

Research Interests

Sequential Decision Making under Uncertainty, Reinforcement Learning (RL), Representation Learning (for RL), Planning, Uncertainty Quantification, Game Theory

Research Experience

May 2022 - Present
Edmonton, Canada

Graduate Research Assistant Fellow
Supervised by Prof. Martin Müller and Jonathan Schaeffer

- **Objective:** learn Chinook Checkers database to achieve compression and pattern recognition using deep neural networks
- reviewed relevant literature
- developed the data processing pipeline that transforms raw byte representation of states into PyTorch Tensors.
- designed and implemented the neural network using PyTorch
- designed the experiment pipeline that is flexible for different configurations
- currently at the stage of massive experimentation

Jan. 2022 - May 2022
Edmonton, Canada

Graduate Research Project
Supervised by Prof. Martin Müller

- **Objective:** review literature from the classic search algorithms to the state-of-the-art AlphaGo (Zero)-inspired algorithms, implement some of the game search algorithms, and potentially discover novel algorithms by combining the strengths of different ideas
- gave two major presentations on related works
- implemented the game Ultimate Tic-Tac-Toe as an environment
- implemented minimax-based algorithms such as alpha-beta search
- implemented simulation-based algorithms such as Monte Carlo tree search
- investigated the possibility of merging heuristic methods and exact methods
- applied machine learning to learn a heuristic function using (dis)proofs as ground truths
- link: github.com/LeonardoWjq/Ultimate_TTT

May 2020 - Sep. 2020 **Undergraduate Research**
Montréal, Canada *Supervised by Prof. Hsiu-chin Lin*

- **Topic:** *Sim-to-Real Transfer Learning of Time-Invariant Linear Parameter-Varying Dynamical Systems from Gaussian Mixture Models*
- studied related literature
- implemented the learning algorithm using NumPy
- performed various experiments on benchmark datasets
- implemented and studied an adaptive re-training mechanism that increases the algorithm's robustness under noisy data

Teaching Experience

Jan. 2022 - Apr. 2022 **Teaching Assistant**
Edmonton, Canada *Search, Knowledge and Simulations*

Sep. 2021 - Dec. 2021 **Teaching Assistant**
Edmonton, Canada *Intro to the Foundations of Computation I*

Jan. 2020 - May 2020 **Teaching Assistant**
Montréal, Canada *Intro to Computer Science*

Work Experience

May 2021 - Jul. 2021 **Development Intern**
Suzhou, China *PTC Inc.*

- helped internationalize the product using the library I18next
- resolved various front-end issues

Skills

- **Technology:** Python(NumPy, Pandas, Matplotlib, Jupyter Notebook, PyTorch, JAX), Java, Git, Linux, LaTeX
- **Knowledge:** Statistical Machine Learning, Deep Learning, (Deep) Reinforcement Learning, Game Theory, Heuristic Search, Computer Vision, Robotics

Honors and Awards

- Science Undergraduate Research Award (SURA) *May 2020, McGill University* ($ 7,000)
- Dean's Honour List *August 2018, McGill University*
- Faculty of Science Scholarship *July 2018, McGill University* ($ 500)
- Complementary Award *Sept. 2017, McGill University* ($ 3,000)
- Hugh Brock Scholarship *July 2017, McGill University* ($ 3,000)

Languages

- English – proficient in working and research settings
- Mandarin Chinese – native speaker
- French – elementary proficiency