DAVID (RUO YU) TAO

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Looking to apply my knowledge of statistical models in hard problems.

INVITED TALKS

Towards Solving Text-based Games by Producing Adaptive Action Spaces
Oral Presentation, WordPlay workshop NeurIPS 2018

Learning from Text-Based Games, Machine Intelligence Conference, MIT, 2018

SKILLS

Programming Languages
Python
Java
Javascript
OCaml
C
Ruby
SQL

Frameworks & Technology
PyTorch
Numpy
Tensorflow
OpenAI Gym
Pandas
Amazon Web Services
Google Cloud Computing
MySQL
MongoDB
Flask
Node & Express
D3.js
Git

AWARDS MISC.

Emily Ross Crawford Scholarship, 2017
Scholarship for achieving a yearly GPA within the top 10% of students in McGill.

Tomlinson Engagement Award for Mentoring, 2017
Undergraduate reward for mentoring Computer Science students.

Commissioned Combat Engineer Officer, 2015
Commissioned officer in the Singapore Armed Forces.

EDUCATION

McGill University – Montreal, QC - *Sep 2016 – Present*
B.Sc. Honours Computer Science. (3.96/4.0 GPA) Expected graduation - Dec 2019.

PUBLICATIONS

Towards Solving Text-based Games by Producing Adaptive Action Spaces
Ruo Yu Tao, Marc-Alexandre Côté, Xingdi Yuan, Layla El Asri
Published for oral presentation at the WordPlay 2018 workshop, NeurIPS 2018.

EMPLOYMENT

Mila (Quebec Artificial Intelligence Institute) – Student Intern | Montreal, CA -
Jan 2019 – Present
Supervisors: Vincent François-Lavet, Joelle Pineau
- Conducting research on model-based exploration in a Reinforcement Learning context.
- First author on an ICLR conference paper submission currently under review.

Microsoft Research – Research Intern | Montreal, CA - *May 2018 – Dec 2018*
Supervisor: Marc-Alexandre Côté
- Applied state-of-the-art text generation techniques that leveraged a mix of attentive and hierarchical language models to produce a dynamic text-based action space for text-based reinforcement learning tasks.
- Leveraged language encodings to train an agent that is able to solve simple text-based games in the TextWorld framework using model-free methods.

Breather Inc. – Software Developer Intern | Montreal, CA - *May 2017 – Aug 2017*
- Worked in an agile environment to implement core backend and database services.
- Parsed and cleaned large sets of data within their production database.

PROJECTS

Exploration with abstract representations - *Jan 2019 - Current*
Supervisors: Vincent François-Lavet, Joelle Pineau
- Research project on exploration with abstract representations for sample-efficient exploration with model-based reinforcement learning.

TextWorld (Microsoft) – Contributor
- Contributor to Microsoft's open source library for reinforcement learning in text-based games. (https://github.com/microsoft/textworld)
- Created the data visualization service to help state and policy representation in reinforcement learning tasks, and helped build the predicate-based world generation engine.

Know Your VC (acquired) – Co-Founder, CTO
- Managed the entire team of developers in developing the Know Your VC application. Built and maintained the entire application that hosted 15,000 monthly active users. (https://knowyourvc.com/)
- Deployed numerous production APIs and applications, including a chrome extension that utilizes named-entity recognition to parse websites and highlight investors.

ACTIVITIES

McGill Artificial Intelligence Society – Co President, Co-founder - *Jun 2017 – May 2019*
- Co-founded the McGill AI Society. Lead multiple workshops, and talks on the basics of machine learning and data science.