Jee Won (Kyra) Park

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EDUCATION

Brown University, Class of 2019. B.A. in Applied Mathematics

Course Highlights

• **Applied Mathematics:** Intro Numerical Optimization (APMA 1160), Applied Partial Differential Equations I (APMA 0360), Information Theory (APMA 1710), Intro to Scientific Computing (APMA 0160), Operations Research (APMA 1200), Statistical Inference I (APMA 1650), Applied Ordinary Differential Equations (APMA 0350).

• **Computer Science:** Data-Centric Intro Programming (CSCI 0050), Machine Learning (CSCI 1420).

• **Mathematics:** Analysis: Functions of One Variable (MATH 1010), Abstract Algebra (MATH 1530), Linear Algebra (MATH 0520).

RESEARCH EXPERIENCE

Brown University Department of Computer Science, *Researcher*. June 2018 – Jan 2020

Advisor: Professor George Konidaris

Researched reinforcement learning (RL) exploration algorithms.

1) Discovering Options for Exploration by Minimizing Cover Time

• Improved the main function in the algorithm which resolved a persistent bug.

• Wrote unit tests in Numpy, NetworkX, and Python3 for the algorithm.

• Clarified the mathematical definitions and theorems the algorithm is based on.

2) Exploration in Reinforcement Learning with Deep Covering Options

• Identified an opportunity in an RL paper based on Probability Theory which served as one of the main results for our publication.

• Reviewed the mathematical assumptions in this RL paper as it was not yet published.

PUBLICATIONS

1) Yuu Jinnai, **Jee Won Park**, David Abel, George Konidaris: Discovering Options for Exploration by Minimizing Cover Time. Proceedings of the International Conference on Machine Learning (ICML) 2019.

2) Yuu Jinnai, **Jee Won Park**, Marlos Machado, George Konidaris: Exploration in Reinforcement Learning with Deep Covering Options. Proceedings of the International Conference on Learning Representations (ICLR) 2020.

GRANTS

Brown University Applied Math Department Travel Grant. May 2019

ACADEMIC PROJECTS

Control Theory and Robotics September 2020 - Current

• Implemented LQR on a Cartpole simulation with a Brown robotics PhD student.

• Solved homework problems on linearization and state-space dynamics from Underactuated Robotics (MIT).

Software Engineering May 2020 - Current

• Reviewing pull requests to Scikit-Learn, an open source machine learning library in Python3.

• Writing software using data structures and algorithms such as recursion, priority queues, binary search, tries, and trees, making incremental git commits by Udacity guidelines.

Tetris Oct 2018 – Jan 2019

• Built the game of Tetris in Java Eclipse IDE from scratch using object oriented design principles, featuring piece rotation, movement, and stacking.

INDUSTRY EXPERIENCE

Odin Partners, *Research Analyst.* June 2015 - Aug 2015, Sep 2020 - Current

Seoul, S. Korea

• Contributed to investing in a company that increased by 13% in valuation in a day and is consistently increasing in value.

• Prevented buying stocks for a company whose valuation has steadily decreased by analyzing trends to estimate a company's profitability in the next five years.

LEADERSHIP EXPERIENCE

Brown Math Dept. Undergrad Group, *Events Coordinator.* September 2015 - May 2016

• Launched and organized weekly study groups for fifteen Math Department Undergraduate Group students.

• Connected the group and the department administration and faculty.

CONFERENCE PARTICIPATION

The International Conference on Machine Learning, Long Beach, CA. June 2019

SKILLS

• *Computer Science*:

Python, Git, Java, MATLAB, Numpy (proficient). ROS, C/C++, Scikit-Learn, Linux, PyTorch (intermediate). Tensorflow (beginner).

• *Language*: Bilingual (English, Korean), French (basic conversations).

• *Mathematics*: Probability Theory, Measure Theory, Stochastic Processes, Linear Algebra (proficient). Statistics, Information Theory, Stochastic Calculus, Control Theory (intermediate).