Rae Jeong

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Courses

Deep Reinforcement Learning CS294-112: DQN, A2C, PPO, GAE, Tensorflow

Convolutional Neural Networks CS231n: CNN Architectures, RNN, Generative Models, PyTorch

Autonomous Mobile Robots MTE544: State Estimation, Mapping, State-Space Control, Planning, ROS

Advanced Dynamics SYDE553: Dynamics of Rigid Bodies, 3D Transformations, Lagrangian Dynamics

Research

Combining Deep Q-Learning and Advantage Actor-Critic for Continuous Control: Rae C. Jeong

Projects

Autonomous Indoor Aerial Robot

Fourth Year Design Project — *May 2017 - Present*

- **Deep Learning**: Collision avoidance in indoor environment by predicting the probability of collision with CNN.
- **Deep Reinforcement Learning**: A2C method for collision avoidance with real images and with real hardware.

RaeboSchool

Personal Project — *Oct 2017*

- **Deep Reinforcement Learning**: Implementing DeepRL algorithms for OpenAI's Roboschool environments.
- **Robot Continous Control**: Focus on DeepRL algorithms suited for continuous control in state space.

Robotic Arm Project

Personal Project — *May 2015 - Dec 2015*

- **Mechatronics**: Low-cost 4 DOF modular actuator robotic arm from scratch.
- **Controls**: PID controls for individual joints for the robotic arm

Experience

Istuary Innovation — Vancouver, BC

Robotics Engineering Intern — *May 2017 - Aug 2017*

- **Robotic Arm Motion Planning**: Flexible motion planning module for UR5 robotic arm using STOMP planner.
- **Deep Reinforcement Learning**: Research assistant for deep reinforcement learning research for robotic arms.

Fetch Robotics — San Jose, CA

Robotics Engineering Intern — *Jan 2016 - Dec 2016*

- **Robotic Arm Optimization**: Increasing the robotic arm efficiency by optimizing the robot joint actuator.
- **Mobile Robot**: Designing electro-mechanical attachments for enabling capabilites for mobile robots.

Waterloo Autonomous Vehicles Lab — Waterloo, ON

Research Assistant — *Sept 2015 - Dec 2015*

- **Camera Gimbal**: Testing the camera gimbal for its accuracy and precision.
- **Stereo Vision Camera**: Modifying the PS4EYE camera to be used with ROS for stero vision research.

MakeLab — Toronto, ON

Robotics Engineering Intern — *May 2015 - Aug 2015*

- **Robotic Arm Design**: Designing robotic arms to be used as versatile marketing event tool.
- **Robotic Arm Software**: Developing the software interface with ROS for ease of use.

Education

University of Waterloo — Waterloo, Ontario, Canada

Bachelor of Applied Science, Mechatronics Engineering, Honours — *Sept. 2013 – Apr. 2018*