FELIX YANWEI WANG

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EDUCATION

Northwestern University **Evanston, IL**
M.S. Robotics *Expected December 2018*
- GPA: 4.0
- Reinforcement Learning, Deep Learning, Dynamics, Robotic Manipulation, Swarm Robotics

Middlebury College **Middlebury, VT**
B.A. Physics & Minor in Computer Science *2012 – 2017*
- GPA: 3.75
- Fluid Dynamics, Quantum Mechanics, Machine Learning, Computer Vision

EXPERIENCE

Deep Reinforcement Learning Project **Evanston, IL**
DQN to model active whisking of rat whiskers for shape detection *2018 – Current*
- Abstracted task to optimize a distance measurement sequence using an outward radially positioned laser array to differentiate triangles and hexagons of 2.5D shape
- Built randomly positioned and oriented shape dataset and visualization tool for observing the measurement
- Used Keras and TensorFlow backend to train an RNN that predicts shape based on a measurement sequence
- Leveraged RNN loss to approximate confidence of current guess and reward of an action
- Trained a Deep Q-Network to optimize actions based on current state to make most relevant measurement

Convolutional Neural Network Project **Middlebury, VT**
LIV Net for facial feature preference *2017 – Current*
- Collected 110 multi-ethnic, consistently lit female faces from the "Ethnic Origins of Beauty" project
- Standardized 110 original faces and averaged them to create another 76 new faces
- Created survey app and generated preference data for all image pairs from the face dataset
- Applied transfer learning using pre-trained VGG-Face to process image pairs to output feature vectors
- Computed distance metric between feature vectors in a pair inspired by Siamese Network
- Trained logistic regression and SVM classifiers to predict preference for a feature vector within a pair, and currently training a fully connected layer to improve upon previous classification results

Goldman Sachs & Co **New York, NY**
Investment Management Division, Fixed Income Analyst *Summer 2014, 2015*
- Analyzed impact of sector allocation biases on the performance of 12 core fixed income managers using 10 years of quarterly return and sector weight; found 50 bps hidden beta by making a customized benchmark
- Developed an analysis tool to compare GSAM historical performance relative to peers in the last 7 years and to allow data visualization in heat maps, which boosted efficiency and shortened meeting by 5 minutes each
- Identified top-down and bottom-up investment styles of managers through performance correlations with sector performance, which improved the risk resistance of GSAM portfolio of third party managers by 10%

Robot Competition, National University of Singapore **Singapore**
Hardware Design *2011 – 2012*
- Built a Lego robot with a team to compete in a robot arena fight using innovative strategy: enabled the robot to spray soapy water to make the floor slippery and increased friction by wrapping the robot's tire with tissue paper; the technique gave us a first-place win
- Designed, assembled, and programed a differential drive robot that could automatically trace a line to find its way out of a maze

SKILLS AND ACTIVITIES

Computer Skills: Python, C++, ROS, CUDA, Keras
Language Skills: Native Chinese, Fluent English
Activities & Leadership:
- **Middlebury College Mountaineering Club Canoeing Guide:** led a three-day-orientation canoeing trip along the Raquette river in the Adirondacks; reacted to a wind storm to avoid capsizing of the crew
- **Middlebury College Theatre Faculty Production:** acted as a lead fairy in *Midsummer Night's Dream*, winning praise for my squirrel-mimicking choreography, which lead to a role in another faculty production