Yilin Wu

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EDUCATION

Stanford University *Sept. 2020(Expected) - Jun. 2022 (Expected)*

- M.S. in Computer Science(newly admitted)

Shanghai Jiao Tong University *Sept. 2016 - Jun. 2020 (Expected)*

- B.S. in Information Security
- Accumulative GPA: **91.89/100** Rank: **1/104**

University of California, Berkeley *Jan. - May. 2019*

- International Exchange Student in Spring Semester
- Major GPA: **4.0/4.0** Accumulative GPA: **4.0/4.0**

PUBLICATION

Yilin Wu *, Wilson Yan *, Thanard Kurutach, Lerrel Pinto, Pieter Abbeel, "Learning to Manipulate Deformable Objects without Demonstrations", under review for *Robotics: Science and Systems*, July. 2020 [PDF][Website]

RESEARCH EXPERIENCE

Berkeley Artificial Intelligence Research Lab, UC Berkeley *May. 2019 - Sep. 2019*

Research Assistant supervised by Prof. Pieter Abbeel

Learning to Manipulate Deformable Objects without Demonstrations

- Keywords: **robotics, reinforcement learning, deep learning**
- Proposed a novel learning framework for picking based on the maximal value of placing.
- Displayed the conditional action space formulation which significantly accelerates the learning of the deformable object manipulation.
- Built the cloth and rope simulated environments in dm_control and showed the transfer to real-robot cloth and rope manipulation with some sim-to-real techniques.
- Became the first to train RL from scratch for deformable object manipulation and demonstrated it on the real robot.
- Completed the research paper as the first author and submitted to the 2020 RSS conference.

Apex Lab, Computer Vision Group, SJTU *Apr. 2018 - Jan. 2019*

Research Assistant supervised by Prof. Yong Yu and Prof. Weinan Zhang

Improving upon VAE-related Models

- Keywords: **generative models, unsupervised learning**
- Gained in-depth understanding of generative models, especially Variational Autoencoder (VAE)and its variants, including the field of Variational Inference.
- Summarized the previous work on the topic by reading and analyzing the related materials about Adversarial Autoencoder(AAE), Wasserstein Autoencoder(WAE), etc.
- Tried with more universal posteriors instead of the deterministic posterior or Gaussian posterior.
- Improved the algorithms of the original WAE, adjusted the parameters to run the tests, and observed the test results.
- Gave a brief talk on VAE-related models in the Apex Lab, including the analysis of improvement and shortcomings of VAE variants.

SELECTED COURSE PROJECTS

An End-to-End Encrypted File Sharing System [PDF][Code] *Mar. 2019*

CS161 Computer Security *UC Berkeley*

- Designed a file sharing system (e.g. Dropbox) that protects user privacy and adds defenses to possible attacks using the knowledge of cryptography learned in class.
- Self-learned and mastered a new programming language Go for the project.
- Wrote a report summarizing the design and functions of the system and clarified the defense against potential major attacks in the system.

Package Sender[Code] *Dec. 2018*

IS301 Computer Communication and Network *Shanghai Jiao Tong University*

- Designed a package sender with a user-friendly GUI operated on Windows system.
- Composed TCP/IP/UDP packages based on information provided by users.

- Provided useful crypto tools, such as AES encryption, RSA encryption, RSA signature, SHA-256, and conversion from string to hex, to maintain the confidentiality and integrity of the message in packets.

Compressing Files[Code] *Oct. 2018*
IS205 Information Theory and Coding *Shanghai Jiao Tong University*

- Compacted different types of files such as .txt, .docx etc. using self-implemented compaction algorithms like Huffman Coding and LZ Coding with 100% accuracy.
- Summarized the characteristics e.g. speed and compression ratio, of Huffman Coding and LZ Coding with detailed experimental results.

SELECTED SCHOLARSHIP & HONORS

Hongyi Scholarship for Summer Overseas Research *(top 10 among all undergraduates)* *2019*
National Scholarship *(<1%)* *2017*
Academic Excellence Scholarship (Second-Class) of SJTU *2017,2018*

MISCELLANEOUS

Standard Test: TOEFL 115 *(Reading 30, Listening 29, Speaking 26, Writing 30)*; GRE 327+4.5 *(Verbal 157, Quantitative 170)*
Programming Skills: C/C++, Python, Matlab, Git, LaTeX
Scientific Computing: TensorFlow, PyTorch, Scipy & Numpy

EXTRACURRICULAR ACTIVITIES

Thailand Chiang Mai Volunteering Project *Jan 2018*

- Taught English to Thai primary school students in Banpamuad School.

Shanghai International Marathon Volunteering Activity *Apr 2017*

- Acted as the group leader to manage over 20 volunteers, arranging tasks including delivering suppliers and taking care of personal items for the participants.

International Communication Association *Nov 2016*

- Organized the Orientation: Meet and Mingle and the Calligraphy Festival for international students.