# Yilin Wu

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## EDUCATION

**Stanford University**      *Newly admitted and deferring for a year*
- M.S. in Computer Science

**Shanghai Jiao Tong University**      *Sept. 2016 - Jun. 2020*
- 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, "Learing to Manipulate Deformable Objects without Demonstrations", *Robotics: Science and Systems(RSS)*, July. 2020 [PDF] [Website]

## RESEARCH EXPERIENCE

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

*Research Assistant supervised by [Prof. Pieter Abbeel]*

### Learing 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

**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 variant

## 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 Networks*      *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

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|---|---|
| Graduated with honor:*Outstanding Graduate of Shanghai* | *2020* |
| Hongyi Scholarship *(Top 10 Summer Research among 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, Scipy & Numpy