Xuefei Li

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Educations

- **Rensselaer Polytechnic Institute** — Troy, NY, US
  Ph.D. in Electrical Engineering; GPA: 3.90/4.0 — *Sep 2020 - Present*
- **University of Minnesota, Twin Cities** — Minneapolis, MN, US
  Master of Science in Computer Science; GPA: 3.875/4.0 — *Sep 2018 - Jun 2020*
- **Fudan University** — Shanghai, China
  B.S. of Theoretical and Applied Mechanics, Top 10% ; Minor in Data Science — *Sep 2014 - Jun 2018*

Technical Skills

- **Programming Languages** Python, C/C++, Matlab, Processing
- **Toolkits and Frameworks** Pytorch, Tensorflow, Keras, OpenGL, MySQL, Unity, AutoCAD

Professional Experience

- **ChenLab at RPI** — Troy, NY, US
  Research Assistant - Advisor: Professor Tianyi Chen — *09/2020 - Present*
  - Researched on **Multi-agent Reinforcement Learning**, conducted simulations with **doubled scale**, communication complexity is decreased by **70**%.
  - FulFilled a framework for Reinforcement Learning over **distributed behavior-agnostic** data sets to achieve close to **linear speedup**, practical to medical and financial data.
  - Collaborated with IBM Research to develop theoretical analysis on the previous work, submitted to NeurIPS.
- **Hewlett-Packard Company (HP)** — Shanghai, China
  Machine Learning Engineer Intern — *04/2018 - 06/2018*
  - Designed workflow, cooperated with **10+** engineers from different teams to push project forward.
  - Applied **Autoencoder** with **RNN** for lossy compression and depression on images by nearly **1/5**.
- **Laboratory for Computation, Data, Machine Learning, UIUC** — Urbana, IL, US
  Summer Intern - Advisor: Prof. Robert J. Brunner — *07/2017 – 09/2017*
  - Implemented ConvNets for feature learning on over **100k+** Sloan Digital Sky Survey images.
  - Constructed a generative model with Variational Autoencoder, Manifold learning, Clustering and Search to segment the objects, with accuracy over **95**%

Projects

- **Mimic Robot** Advisor: Prof. Stephen J. Guy, Applied Motion Lab at UMN
  - Enhanced **real-time 3D human pose estimation** from a single video clip on Rasberry Pi based on OpenPose.
  - Leveraged kinematically plausible motion sequences, through adversarial learning a large-scale MoCap dataset.
  - Implemented **Proximal Policy Optimization** for data-driven character animation on collected data
- **Food Web Visualization** Advisor: Prof. Daniel Keefe, Interactive Visualization Lab at UMN
  - Collaborated with Bell Museum, Minnesota, responsible for the rendering of 2D/3D structures using Processing.
  - Created an **interactive game** that simulates Energy Pyramid with **OpenGL**
  - Deployed a website that integrates various forms of visualization into one using **HTML** and **JavaScript**.
- **Computer Vision Practices** Advisor: Prod. Hyun Soo Park, UMN Vision Lab
  - Collected First-Person videos in grocery stores with GoPro, reconstructed a **cognitive map** using **SLAM**.
  - Refined a pipeline that transfers from **multi-view** images to **SMPL mesh reconstruction**, unwraps the IUV map, and finally integrates view-specific textures to **continuous rendering** model.

Publications

- **Communication-efficient Offline Policy Optimization from Distributed Batch Data.** *Han Shen, Xuefei Li, Songtao Lu, Lior Horesh, Tianyi Chen.* **Asilomar 2021**
- **Offline Policy Optimization Over Distributed Behavior-agnostic Datasets.** *Han Shen, Xuefei Li, Songtao Lu, Tianyi Chen.* **NeurIPS 2021** (submitted)