Xuefei Li (Ivy)

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EDUCATIONS

Rensselaer Polytechnic Institute Troy, NY, US
Master of Science in Electrical Engineering; TA/RA *Sep 2020 - Present*

University of Minnesota, Twin Cities Minneapolis, MN, US
Master of Science in Computer Science *Sep 2018 - Jun 2020*

Fudan University Shanghai, China
B.S. of Theoretical and Applied Mechanics; 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, 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.

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** to 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 **10k+** 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.

- **Distributed Computing**
  - Built up a publish subscribe system from scratch by leveraging UDP and RPC and supported server recovery.
  - Implemented a Bulletin Board system which allows user interaction and offers sequential/quorum/read-your write consistency.
  - Established a serverless file system with load balancing and fault tolerance support based on xFS.