YAN PAN

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EDUCATION

Carnegie Mellon University Aug 2019 – Present
B.S. in Computer Science, Minors in Machine Learning & Mathematics (GPA: 3.96/4.00) *Pittsburgh, PA*

- **Coursework:** Convex Optimization†, Machine Learning†, Multimodal Machine Learning†, Algorithm Design and Analysis, Computational Photography, Computer Vision, Computer Graphics, Theoretical CS. (†: PhD level)
- Exchange Student at **Tsinghua University** in Spring 2021.

EXPERIENCES

Undergraduate Research Assistant Jan 2021 – Present
CMU MultiComp Lab, with Prof. Louis-Philippe Morency *Pittsburgh, PA*

- Researched multimodal machine learning for multimodal social interations. Experimented with state-of-the-art language models, visual-linguistic models, and multimodal attention mechanisms on egocentric datasets using PyTorch. Working on integrating reinforcement learning and world models to increase interactivity.

Student Researcher Jun 2018 – Dec 2018
Peking University Institute of Remote Sensing and GIS *Beijing, China*

- Visualized and analyzed spatio-temporal features of shared bike distribution. Applied deep learning models including LSTM to predict the demand for shared bikes.

Instructor of Mathematical Modeling Course Jan 2019 – Jul 2019
High School Affiliated to Renmin University of China *Beijing, China*

- Instructed a full semester elective course *Mathematical Modeling and Applications* for high school students. Taught lectures and designed materials for optimization, differential equations, graph theory, clustering, and basic machine learning. Advised students in the design and implementation of final projects.

PROJECTS

Scotty3D Jan 2021 – May 2021

- Wrote a 3D graphics software package that includes components for interactive mesh editing, realistic path tracing, and dynamic animation in C++.
- Documents: Project description (by course instructor)

Classical Piano Music Generator Based on LSTM-RBM Oct 2020 – Jan 2021

- Processed midi files of piano music into inputs of neural networks. Implemented LSTM-RBM model architecture in PyTorch for pitch generation. Improved baseline with rhythm generation conditioned on the pitch.
- Documents: GitHub, Report

Simulation of Social Gathering Dynamics Sep 2019 – Dec 2019

- Constructed simulation model of social gatherings in NetLogo and studied their dissolution as a complex system.

HONORS & AWARDS

- CMU Summer Undergraduate Research Fellowship (SURF) Summer 2021
- CMU Dean's List, High Honors Fall 2019 – Spring 2021
- Shing-Tung Yau High School Science Award – Computer Award, Global Finalist Dec 2018
- International Mathematical Modeling Challenge (IMMC), Finalist (Intl.) & Outstanding (China) May 2018
- DengFeng Cup National High School Academic Contest – Data Mining Aug 2017

SKILLS

Programming Languages	Python, C++, C, MATLAB, Standard ML, Haskell, Java
Platforms	PyTorch, TensorFlow, Keras, Scikit-Learn, OpenCV, OpenGL
Software Tools	LaTeX, Git, Vim
Natural Languages	English (proficient), Mandarin Chinese (native)