

# YAN PAN

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## EDUCATION

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- Carnegie Mellon University School of Computer Science** Aug 2019 – Present  
B.S. in Computer Science, Minors in Machine Learning & Mathematics (GPA: 3.95/4.00) *Pittsburgh, PA*
- **Coursework:** Convex Optimization<sup>†</sup>, Machine Learning<sup>†</sup>, Computer Vision, Computer Graphics, Computer Systems, Data Structures and Algorithms, Theoretical Computer Science. (<sup>†</sup>: PhD level, \*: Currently taking)
  - Exchange Student at **Tsinghua University** in Spring 2021.

## EXPERIENCES

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- CMU MultiComp Lab** Jan 2021 – Present  
Undergraduate Research Assistant with Prof. Louis-Philippe Morency *Pittsburgh, PA*
- Researched about multimodal machine learning for multimodal social interactions. Extended state-of-the-art language models with multimodal attention and fine-tuned on egocentric datasets using PyTorch. Working on designing reinforcement learning models to improve interactivity.
- Peking University Institute of Remote Sensing and GIS** Jun 2018 – Dec 2018  
High School Researcher *Beijing, China*
- Visualized and analyzed spatio-temporal features of shared bike distribution. Applied deep learning models including LSTM and DenseNet to predict the demand for shared bikes. Published conference paper as the first author.
- High School Affiliated to Renmin University of China** Jan 2019 – Jul 2019  
Instructor of *Mathematical Modeling and Applications* *Beijing, China*
- Instructed a full semester elective course for high school students. Taught lectures and designed materials for optimization, differential equations, graph theory, clustering. Advised students in the design and implementation of final projects.

## PROJECTS

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- Scotty3D** Jan 2021 – May 2021
- Wrote a 3D graphics software package includes components for interactive mesh editing, realistic path tracing, and dynamic animation in C++. Full project description: [cmu-graphics.github.io/Scotty3D](https://github.com/panyan7/cmu-graphics).
- Classical Piano Music Generator Based on LSTM-RBM** Oct 2020 – Jan 2021
- Studied stylistic music generation based on deep learning. Designed LSTM-RBM model architecture and implemented in PyTorch. Improved baseline with rhythm generation. GitHub Link: [panyan7/music-lstm-rbm](https://github.com/panyan7/music-lstm-rbm).
- 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

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- CMU Summer Undergraduate Research Fellowship (SURF) Summer 2021
  - CMU Dean's List, High Honors Fall 2019 – Fall 2020
  - 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

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<b>Programming Languages</b>	Python, C++, C, MATLAB, Standard ML, Haskell, Java
<b>Platforms</b>	PyTorch, TensorFlow, Keras, Scikit-Learn, OpenCV, OpenGL
<b>Software Tools</b>	L <sup>A</sup> T <sub>E</sub> X, Git, Vim
<b>Natural Languages</b>	English, Mandarin Chinese