Lirong Yao

E-Mail: ly373@cornell.edu. Tel: (607)-252-6760. Website: **Harmonyano.github.io**

Education

Cornell University, College of Arts & Sciences, Ithaca, NY **Expected May 2023**
Bachelor of Arts in Computer Science **GPA: 3.89, CS GPA: 4.00**

Related Coursework:
Object-Oriented Design and Data Structures - Honors, Introduction to Analysis of Algorithms, Data Structures and Functional Programming, Discrete Structures - Honors, Computer System Organization, Natural Language Processing, Introduction to Machine Learning, Structure of Information Networks, Introduction to Database

Study Away at Tsinghua University **Fall 2020**
Related Coursework: Data Structures and Algorithm, Network and Traffic

Relevant Experiences

Big Data Intern, Haier (General Electric), Smart Home Department **May – August 2021**
- Constructed a neural network model that predicts commodity sale to direct storage at each warehouse in China. Built it in TensorFlow1 with batch normalization and ResNet in a team of 3.
- Achieved a 50%~60% accuracy score over different industries. Presented the result to sales department.
- Deployed the program as a script on server that runs weekly and is still in use today.
- Designed a corresponding model in TensorFlow2 to predict spare part demand for aftersales each month.

Teaching Assistant, Cornell University **August 2020 – May 2021**
- Discrete Structures - Honors | Introduction to Analysis of Algorithms
- Assessed students' needs, prepared study sessions, and held weekly office hours to help classes ranging from 40 to 300 people

Algorithm Intern, Seer Robotics **July – August 2020**
- Tested 4 different coverage path planning algorithms under Dr. QiangSheng Huang.
- Implemented Spanning Tree Coverage algorithm that allows robots to cover each point precisely once.
- Improved the algorithm independently so that minimum turning is performed when robot moves.
- Presented result as the core algorithm of Seer Robotic's sweeping robot to customers.

Projects

Predicting Traffic Congestion (via Network and Traffic at Tsinghua) **September 2020 – January 2021**
- Studied topics such as Threshold-Based Models of Diffusion, Collective Action, Random Walks, and their applications on traffic under Dr. Zhiyuan Liu.
- Created a neural network model in PyTorch to predict congestion patterns at Tsinghua University's campus.

Simulating Evolving Artificial Life (via CS2112 OOP and Data Structures - Honors) **October - November 2019**
- Led a team of 3 programmers to build a simulation of a hexagonal critter world where critters of different species move, eat, reproduce, and evolve.
- Coded in Java a parser that converts critter's genome to an abstract syntax tree and an interpreter to execute the corresponding program.
- Implemented a distributed client-server system, permitting multi-user to view and interact with the model concurrently through GUI.

Skills

Programming Languages: Java (advanced), Python (advanced), C (proficient), C++ (proficient), OCaml (proficient), MATLAB (intermediate), SQL (intermediate), Node.js (novice), PHP (novice), HTML (novice)
Spoken Languages: Chinese (native), Japanese (intermediate)