Wenkai **Pan**

Machine Learning · Data Science · Robotics

Liu Xia Street, Xihu District, Hangzhou, Zhejiang, China, 310013

+86 195 1127 4300 | wenkaip@protonmail.com | wenkaip.xyz

Education

University of Washington *Seattle, WA*

B.A. in Mathematics *Sept. 2018 - Aug. 2021*

- Overall GPA: 3.58/4.00
- Dean's List 2018 - 2019
- Research Interests: Machine Learning, Data Science, Robotics
- **Selected coursework:**
  - **CSE 546** Machine Learning
  - **CSE 547** Machine Learning for Big Data
  - **MATH 514** Networks And Combinatorial Optimization
  - **LING 571** Deep Processing Techniques For Natural Language Processing

Research Experiences

Department of CSE, Hong Kong University of Science and Technology *Hong Kong, China*

Undergraduate Research Assistant *June 2021 - Current*

- Advisor: **Ke Yi**.
- Link: http://www.academic.cetustalk.com.
- Worked on big data computing with Hadoop and Spark. Acquired both the theory and hands-on experience of these big data systems.
- Currently working on an international conference paper regarding the use of data mining to summarize the patterns and understandable information in order to discover their values.

HCR Lab, University of Washington *Seattle, WA*

Undergraduate Research Assistant *June 2020 - June 2021*

- Advisor: **Maru Cabrera**.
- Group link: https://hcrlab.cs.washington.edu.
- Worked with RoboCup@Home Open Platform League Team.
- Worked on machine learning tasks to build a robotics system which can autonomously perform a series of tasks in the home environment.

Personal Robotics Lab, University of Washington *Seattle, WA*

Undergraduate Research Assistant *June 2020 - Dec. 2020*

- Advisor: **Rosario Scalise**.
- Group link: https://personalrobotics.cs.washington.edu.
- Worked on Multitask Unsupervised Learning Project, using pytorch + the PyRoMID framework to develop a training pipeline for robotics-oriented mulitask unsupervised learning problems.

Industry Experiences

Hundsun Technologies Inc. *Hangzhou, China*

Software Development Intern *July 2019 - Aug. 2019*

- Wrote, tested and deployed financial apps providing services for other firms.
- Built an app used for reporting the stock market trend and predicting the future behaviors.
- Improved communication and teamwork skills through integrating my work with others using the same programming styles and formats.

E.T. Logistics Laboratory, Alibaba Group *Hangzhou, China*

Research Intern *Aug. 2019 - Sept. 2019*

- Read related research paper on machine learning algorithms.
- Studied Linux and Robot Operating System(ROS) command line tools.

Skills

Programming Languages Python, Java, C++, JavaScript, PHP, MATLAB, R, SAS, SQL, LaTeX.

Tools and Frameworks PyTorch, Git, LXC, VueJS, Flask, Hadoop, Spark, ROS.

Skills Object-Oriented Programming, Web Development

Selected Projects

Identifying Most Frequent Word Pairs with Spark Streaming Techniques

Research Project

Work Done at Department of CSE @ HKUST

July 2021 - Aug. 2021

- Printed out the top ten adjective-noun pairs with the largest frequency at the end of each batch using a spark streaming program.
- Predicted that although the number of a specific word pair may not be as large as the number of a specific word, the number of new combinations any two distinct words can make is much greater than the total number of distinct words.

Lyft Motion Prediction for Autonomous Vehicles (AVs)

Research Project

Work Done at Personal Robotics Lab @ UW

June 2020 - Dec. 2020

- The goal of this project is to build motion prediction models that accurately predict traffic agents' movement around the AV. I utilized the PyRoMID framework to train and test different combination of machine learning models on the given Prediction Dataset. This project is also formulated as a Kaggle competition.

Identifying Feeding Strategies with Unsupervised Learning

Class Project

Work Done in CSE547 Machine Learning For Big Data

Mar. 2020 - June 2020

- Facilitated autonomous robotic feeding.
- Clustered foods into clusters based on sensor data collected from a fork during human feeding trials. Found that the hardness of a food and whether a food is curved are the main factors that determine the feeding strategy used for the foods examined.

Analysis of criminal situation in Chicago from 2001-2019

Class Project

Work Done in CSE163 Intermediate Data Programming

Apr. 2019 - June 2019

- Used different kinds of data science libraries to analyze the crime data set in Chicago.
- Predicted the possibility of the criminal being arrested at a given time of a day and a given criminal type.
- Found the ranking of safety of different areas of Chicago.
- Found out how the rate of solved case affect the crime rate.
- Found out how the poverty rate, unemployment rate, educational level and age distribution among people affect the crime rate in a particular community area during a specific period of time.

My Beloved Leader: a game about immigration

Class Project

Work Done in CSE190 Game Design for Problem-Solving With Python

Aug. 2018 - Sept. 2018

- Built a single player role playing game so that players can have fun playing while learning the rules of immigration at the same time.

Extracurricular Activity

DubsTech, University of Washington

Seattle, WA

Club Member

Sept. 2018 - Aug. 2021

- Attended various workshops teaching programming tools and frameworks.
- Attended the Full Stack Web Development Program. Acquired the materials from backend to frontend at a fast pace and deploy a chat app.