

# Wenkai Pan

MACHINE LEARNING · NATURAL LANGUAGE PROCESSING · ROBOTICS

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## Education

### University of Washington

Seattle, WA

B.S. IN MATHEMATICS

Sept. 2018 - Current

- Overall GPA: 3.55/4.00
- Dean's List 2018 - 2019
- Research Interests: Machine Learning, Natural Language Processing, 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

### HCR Lab, University of Washington

Seattle, WA

UNDERGRADUATE RESEARCH ASSISTANT

June 2020 - Current

- Advisor: **Maru Cabrera**.
- Group link: <https://hcrlab.cs.washington.edu>.
- Currently working with RoboCup@Home Open Platform League Team.
- Currently working 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 multitask 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, Spark, ROS.

**Skills** Object-Oriented Programming, Web Development

## Selected Projects

### 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

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### DubsTech, University of Washington

Seattle, WA

CLUB MEMBER

Sept. 2018 - Current

- 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.