Yilun Wu

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Education

Carnegie Mellon University (Pittsburgh, PA) [May 2022]

- Bachelor of Science in Materials Science & Engineering, Double Major in Statistics & Machine Learning
- Relevant Courses: Introduction to Machine Learning (PhD) (10-701), Advanced Natural Language Processing (11-711), Methods of Computational Materials Science (27-734), Algorithms and Advanced Data Structures (15-351), Artificial Intelligence: Representation & Problem Solving (15-281), Probability & Mathematical Statistics (36-700), Methods of Statistical Learning (36-462)

Skills

Technical: Python, R, SQL, PostgreSQL, MATLAB, C, C++, Standard ML, Java, Go, HTML, LaTeX, Microsoft EXCEL

Languages: English, Mandarin Chinese

Projects

Multiple Choice Reading Comprehension with Small Transformer Models [Nov 2021-Dec 2021]

- Advanced Natural Language Processing (11-711) final project
- Re-implemented and upgraded a Multiple-choice Machine Reading Comprehension model based on ALBERT and DUMA
- GitHub: https://github.com/CanYouTeachMeHowToCode/Multiple-Choice-Reading-Comprehension-with-Small-Transformer-Models, Reference (part): https://arxiv.org/abs/2001.09415, http://arxiv.org/abs/1810.04805, http://arxiv.org/abs/1704.04683

AI Plays Board Game *2048* [May 2020]

- Re-implemented and upgraded an AI agent for board game *2048* using Expectimax, Minimax and Reinforcement Learning
- GitHub: https://github.com/CanYouTeachMeHowToCode/2048-python-game,
- Reference: http://cs229.stanford.edu/proj2016/report/NieHouAn-AIPlays2048-report.pdf

Work Experience

Statistics Teaching Assistant at CMU, Pittsburgh, PA. [Jun 2021-May 2022]

- Course: Engineering Statistics & Quality Control (36-220) in Summer 2021, Introduction to Statistical Inference (36-226) in Fall 2021, Statistical Computing (36-350) in Spring 2022
- Holding lab sessions for over 130 students 1.5 hours per 2 weeks (Statistical Computing)
- Holding office hours & grading homework sets/exams/labs/projects for over 130 students ~10 hours per week

Materials Science & Engineering Teaching Assistant at CMU, Pittsburgh, PA. [Aug 2021-Nov 2021]

- Course: Methods of Computational Materials Science (27-734) (Graduate level course)
- Holding office hours & grading homework sets/quizzes/projects for over 30 graduate students ~10 hours per week

Machine Learning Engineer Intern at SenseTime, Shenzhen, China (remote) [Jun 2020-Dec 2020]

- Natural Language Processing (NLP) intern under Education-Computer Vision department
  - Constructed NLP language models for predicting topics of texts in English, Simplified Chinese, and Traditional Chinese using NLTK
  - Constructed recommend systems for large datasets (over 100,000) of movies and poems using scikit-learn, pandas
  - Implemented Introduction to Artificial Intelligence for Middle School Students educational packages using scikit-learn, pandas

Mathematics Teaching Assistant at CMU, Pittsburgh, PA. [Jan 2020-May 2020]

- Course: Matrix Algebra with Applications (21-240)
- Holding recitations for 20 students 1 hour per week
- Holding office hours & grading homework sets/exams for over 50 students ~10 hours per week

Machine Learning Engineer Intern at SenseTime, Shenzhen, China [Jul 2019-Aug 2019]

- Deep Learning intern under Engineering-Video Processing & Big Data department
- Re-implemented and evaluated a Talking-Face-Generation Project demo using PyTorch, OpenCV

Research Experience

Research Internship at CMU, Pittsburgh, PA. [Jun 2021-Aug 2021]

- NextGen Research Fellowship Materials Data Science Research Program under Holm Group
- Designed and evaluated crack detection models for 1024 ×1024 grayscale biphasic ceramics micrographs using PyTorch, OpenCV
  - Image-based classification using multiple deep models including modified VGG16, modified AlexNet, and classifiers including Support Vector Machine, Logistic Regression & Random Forest
  - Semantic segmentation using modified pre-trained U-net model

Extracurricular Activities

CMU Chinese Student Association (CSA) Internal Department Chairman [Aug 2019-May 2021]

- Planned and organized various activities—Chinese New-Year Extravaganza/Casino Night/Fence Painting for various holiday celebrations