Xiaoyu Sun

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Education

Rutgers, The State University of New Jersey — New Brunswick, NJ
Computer Science, B.S. — Sept 2018 - Present
Cumulative GPA: 3.82/4.00
Major GPA: 3.95/4.00

Teaching Experience

Rutgers Office for Diversity and Academic Success in the Sciences — New Brunswick, NJ
Recitation Instructor — Sept 2020 - Present

- Fall 2020 - General Physics II
  - Topics included: Electricity, Electric Circuits, Electromagnetism, Optics, Special Relativity, and Radioactivity.
  - Recorded recitation videos each week explaining homework questions.
  - Held three hours of review session each week for 30+ students.
  - Held weekly office hours.

Research Experience

Rutgers Department of Civil & Environmental Engineering — New Brunswick, NJ
Research Assistant to Prof. Xiang Liu — Sept 2020 - Present

- Conducted research on the topic of "Artificial Intelligence for Next-Generation Intelligent Transportation Systems."
- Applied logistic regression models to help address process inefficiencies related to port inspections.

Professional Experience

Rutgers Undergraduate Research Journal — New Brunswick, NJ
Co-founder, Editor — Sept 2019 - Sept 2020

- Founded the university-wide undergraduate research journal.
- Provided training sessions for new members to familiar with the review process.
- Reviewed papers in different fields as a reviewer, and given suggestions on logic flow and construction.
- Assisted professors in reviewing and giving reports to authors with feedback on the research content.

Research Projects

Fast Trajectory Replanning Summer 2020
Rutgers University

- Implemented path planning with Python. Using several modified A* algorithms to find the shortest path for an agent to move toward a goal in an unknown environment with randomly generalized obstacles.

Face and Digit Classification Summer 2020
Rutgers University

- Designed two classifiers, a Naive Bayes classifier, and a Perceptron classifier. Applied both classifiers to do each of the two tasks: digit recognition and face detection. Obtained over 60% accuracy for digit recognition and 70% for facial detection.

Linear Image Classifier Spring 2020
Rutgers University

- Built a linear image classifier from scratch in PyTorch using CIFAR10 dataset. Implemented both the forward pass and backward pass of the linear classifier without using PyTorch's autograd capabilities.

Neural Machine Translation Spring 2020
Rutgers University

- Implemented neural machine translation (NMT) models using recurrent neural networks (RNN), long short-term memory (LSTM) with attention, and transformers.

Reinforcement Learning Spring 2020
Rutgers University

- Implemented Deep Q-learning (DQN) using OpenAI Gym environments.

Honors

Dean's List, Rutgers University, New Brunswick, NJ 2018 - 2020

Skills

Programming Language: Python, Java, C, mySQL

Framework: PyTorch

Markup: LaTex, Markdown

Speaking Language: English, Chinese