Junlan Lu

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EDUCATION

University of California-Los Angeles (UCLA)

GPA: 3.5
B.S. Computer Science
Expected grad.: Mar 2022

Relevant Coursework

- Data Science Fundamentals
- Machine Learning
- Algorithms and Complexity

Awards

- Dean's Honor List

SKILLS

Languages

- Python (Fluent)
- C++/C (Fluent)
- SQL (Fluent)

Machine Learning

- Pytorch, Keras
- Pandas, scikit-learn, Numpy

Tools

- Adobe Premiere Pro
- Pycharm, git, emacs
- Excel
- Lightroom

WORK EXPERIENCE

Software and Data Science Intern

Redux Recycling, Los Angeles, CA | May 2020 - Aug 2020

- Developed a software for trash bins to classify trash objects
- Performed data mining skills and image augmentation to create thorough datasets with almost real images
- Designed an algorithm with CNN model using Pytorch with 70+% accuracy of prediction, surpassing almost all existing methods

RESEARCH

Algorithms Revealing Microstructures in Neuroimages

UCLA (neuroimaging) | Advisor: Prof. D. Tward | Jun 2020 - Aug 2020

- Developed an algorithm to build a "brain atlas" - a reference neuroimage - to quantify cell distribution patterns in brain
- Created a PyPI package with new scatter transform methods using convolution networks and gaussian downsample
- Performed 2D and 3D image registration that combine multiple high-resolution images with deformations
- 87% accuracy in alignment prediction using machine learning techniques like Linear Discriminant Analysis and Random Forest

Machine Learning-Based Super-Resolution MRI

Tensorflow | UCLA | Advisor: Prof. Fabien Scalzo | Mar 2020 - Jun 2020

- Evaluated the accuracy of Deep Learning and Google RAISR algorithms - a ML technique that produces high-quality versions of low-resolution image - in MRI imaging datasets
- Explored Enhanced Deep ResNet (EDSR) and Wide Activation Deep ResNet (WDSR) with Tensorflow
- The result demonstrated RAISR was yet to be a qualified model for MRI analysis compared to EDSR

SELECTED PROJECTS

Obstacles Detection for Self-Driving Cars *Pytorch*

- Built an object detection model for cars that analyzes short videos taken by webcam and detects obstacles like green or red traffic lights, pedestrians, and other vehicles etc.
- Combined with video analysis to create a pipeline, then examined with YOLOv5 and R-CNN algorithms
- Trained on 15k real images Datasets with 70% accuracy within 1000 epoches

Flower Recognition *Tensorflow, Keras*

- Designed a deep learning model that combined EfficientNetB7 and DenseNet201 in Keras to classify 104 classes of flowers
- Extracted information in tfrec data, performed data augmentation, then trained 70k datasets with TPU to achieve 97% accuracy within 50 epochs in top 8% on leaderboard