ZILIN REN

github.com/shellyREn zilinr@andrew.cmu.edu
Pittsburgh, Pennsylvania, United States (412)-759-9527

EDUCATION

Carnegie Mellon University, Pittsburgh *Sep 2018 - 2022*
Major: Bachelor of Statistics and Machine Learning (GPA: 3.78)
Minor: Machine Learning
Dean's List Honoree *2018-2019 semesters, 2020-2021 Spring*

SKILLS

Programming Languages: Python, Java, R, SQL, C, Standard ML(SML/NJ)
Software & Tools: MySQL, Git, GCP, AWS EC2, Docker, Jupyter notebook, Pytorch

RELEVANT COURSE

Introduction to Machine Learning (PhD)(10-701), Intro to Deep Learning (PhD) (11-785), Data Structure for Application Programmer (17-683), Natural Language Processing (11-411), Algorithm and Advanced Data Structure (15-351)

WORK EXPERIENCE

Shenzhen MinDe Electronics Technology Ltd. *Dec 2020 - Jan 2021, June 2021 - Aug 2021*
Machine Learning Researcher & Engineer
- Conduct research of object detection techniques and common object detection practice in Deep Learning.
- Self-learn and **individually** coded YOLOv3 from scratch using **Pytorch** to perform deep learning object detection on 30,000+ barcode and QR code images, and achieved above 0.8 F1-score.
- Help the company to explore a possible new way to carry out their traditional Barcode and QR scanning business.

"Intro to Data Science", X Academy 2021 (Chengdu, China) *July 2021*
Teaching Assistant
- Assist in teaching data science and machine learning algorithms to high schoolers and college students.
- Instructed on Machine Learning related capstone projects and provide training in **scikit-learn** library.

RESEARCH EXPERIENCE

Deep neural network parameter quantization - Instructor: Professor Bhiksha Raj *Spring 2021 - now*
Deep Learning Researcher
- Perform K-means network parameter quantization basline of MLP and CNN using ONNX package in **Pytorch**.
- Develop a new K-means loss function training for network parameters clustering, and run experiments in **Pytorch**.
- Ideally it would reduce memory use by compressing neural network model size, and accelerate inference time.

PROJECTS

GAN music generation using CNN based model *Fall 2022*
Machine Learning Engineer & Software Engineer
- Use CNN based generative adversarial network to generate MIDI format music with normalized random input.
- Analyze model performance quantitively using PyPianoroll package and discover patterns for different model.

NLP Question Asking and Answering System *Fall 2022*
Software Engineer
- Generate proper questions from Wikipedia articles, and provide concise and accurate answers for those questions.
- Use POS tagging, NER tagging, Dependency parsing to perform sentence parsing and semantic analysis in **python**.

Face Classification, Phoneme to Text, Voice to text translation *Spring 2021*
Software Engineer
- Use CNN, RNN, LSTM with Attention, etc, to perform deep learning tasks using **Pytorch** framework.
- Ranked top 10% for all assignments in **Kaggle** Competitions (11-785 2021 Spring) among the 200+ students in class.