

Pengze (Jerry) Liu

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EDUCATION

Dartmouth College Sep. 2019 - Mar. 2021
Master of Science in Computer Science (GPA: 3.91)
Hanover, NH
Scholarships & Awards: Dartmouth Computer Science Scholarship

City University of Hong Kong Aug. 2015 - Jul. 2019
Bachelor of Science in Computer Science (GPA: 3.59)
Hong Kong
Scholarships & Awards: City University Scholarship, Chan Sui Hung Best Student Award, Dean's List

SKILLS

- **Programming Languages:** C/C++, Python, Java, JavaScript, Go, HTML, CSS, Typescript, CUDA C, SQL
- **Tools & Frameworks:** React, Redux, Flask, Node.JS, Android, PyTorch, Tensorflow, Git, Docker, Kubernetes, Pact, MySQL, MongoDB

WORK EXPERIENCE

Arista Networks May. 2021 - Present
Software Engineer (WebTools Team)
Nashua, NH

- Created a new page in a bug tracking site to display Regex matching criteria using **JavaScript**, **React** and **Redux**.
- Extended the backend to handle new CRUD requests in two bug tracking websites in **Go** and **NodeJS** respectively.
- Embedded an elastic search client in project tracking site, reduced the searching time by over 90% using **Python/Flask**.
- Designed and developed in full-stack a new web page template, used by 1000+ developers, to filter bugs by contents.

SenseTime Group Jun. 2017 - May. 2018
Research Intern (Computer Vision R&D)
Hong Kong

- Designed and optimized novel neural network architectures for pedestrian attribute recognition, improved per-class accuracy by 5% using **Caffe** and **PyTorch**. which resulted in increasing accuracy of pedestrian recognition by 5%.
- Credited for expanding classes from 7 to 23 on 2.5M samples without precision decay by leveraging parameter sharing.
- Developed new operators and visualization tools for the internal deep learning framework in **C++**, **Python** and **CUDA C**.
- Upgraded the video processing pipeline by leveraging multi-threading, achieved 1,000% acceleration using **C++**.

SELECTED PROJECTS

SKINN: Semantic Knowledge Inference Neural Network for COVID-19 Classification Oct. - Nov. 2020
Python, PyTorch, Deep Learning

- Developed and optimized a Neural Network to classify healthy or COVID-19 infected lung CT scans using **PyTorch**.
- Proposed an approach to hybrid the lesion segmentation network on top of the classifier, boosted the F-1 score by 19%.

Echo: a smart journal mobile APP Apr. - May. 2020
Java, Android, SQLite, IBM Watson

- Designed and developed a journal App that allowed users to upload text, image, and audio to the cloud in **Java**.
- Embedded Computer Vision and Natural Language Processing models to the App to predict user emotions from diaries.
- Implemented endpoints to use IBM Watson APIs for content recommendation based on the predicted user emotion tags.

StayFocused: Preventing Smartphone Addiction Feb. - Mar. 2020
Java, Android, Firebase, SQLite, Git

- Developed an Android App in a team of four with multiple modules that support features including to-do list, timer, screen blocker, login page, and focusing history record, that facilitate working efficiency improvement.
- Implemented a module that blocks phone interactions until the user-set timer is off, using **Java**, **Firebase** and **SQLite**.

Predicting Suicide Mortality of Schizophrenia Patients Nov. - Dec. 2018
Python, Machine Learning, Tensorflow

- Implemented and optimized multiple machine learning algorithms like SVM to predict the possibility of suicide in **Python**.
- Designed extensive feature engineering based on Exploratory Data Analysis, increased the AUC-ROC score by 14.25%.

Comprehensive project list and details are on [my website](#).

PUBLICATION

Localization Guided Learning for Pedestrian Attribute Recognition BMVC 2018
Pengze Liu, Xihui Liu, Junjie Yan, Jing Shao
49 citations

- Designed, implemented and optimized a convolutional neural network to perform multi-label classification using **Caffe**.
- Developed novel operators for Caffe, the deep learning framework, to manipulate feature maps in **C++** and **CUDA C**.
- Introduced weakly supervised detection for feature extraction, increasing the mean accuracy by 4% over the baseline.