

# Fangchen Ye

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## EDUCATION

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**Columbia University, Fu Foundation School of Engineering and Applied Science - MS,**  
Computer Science

May 2022

New York, NY, US

**Sun Yat-sen University, School of Data and Computer Science - BE,**  
Intelligence Science and Technology

Jun 2020

Guangzhou, Guangdong, China

## WORK EXPERIENCE

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**Cadence - Software Engineer Intern**

Jun 2021 - Aug 2021

Shanghai, China

- Utilized **C++** to optimize grid based router structure at the software level, modified M0 jumpers, enabled the sources to avoid high resistance and improved efficiency of circuit flows
- Applied **A-star** Algorithm for finding the shortest route between two points and optimized data structures, which saved 6% time on large-scale nets and utilized **QT Creator** to design user interfaces

**DiDi AI Labs - Algorithm Engineer Intern**

Jul 2020 - Dec 2020

Beijing, China

- Conducted the research related to **Auto Machine Learning**, especially on **Neural Architecture Search (NAS)** and **DARTS** to help the team calculate the feasibility of each model ported to mobile device
- Reproduced different models with **Pytorch** and conducted performance benchmarking based on top-1 and top-5 accuracy on **ImageNet** or **Cifar-10**, in terms of parameter sizes, and training time of GPU hours
- Figured out new metrics like search space of width and depth, and types of blocks to develop the optimal model for mobile computing that improved 11% overall performance
- Summarized characteristics of each model and wrote an overview, providing the laboratory with a theoretical basis for research on the automatic driving in the future

**University of British Columbia - Research Assistant**

Jul 2019 - Sep 2019

Vancouver, BC, Canada

- Conducted segmentation of brain FLAIR and T1 scan images using neural network models of **DeepMedic**, **FCN** and **ResNet** with **Keras**, and marked the part of white matter hyperintensities (WMH)
- Pre-processed the same raw data by removing masks in different parts like skulls, and tested the effects that removal of skull masks improved **Recall** by 5% for **FCN** and **F1-score** by 10% for **DeepMedic**
- Implemented the models of **FCN** and **DeepMedic** on images of patients with size 224\*224 to identify white matter hyperintensities, which largely saved preparation effort and increased diagnostic accuracy

**Sun Yat-sen University, School of Data and Computer Science - Research Assistant**

Sep 2018 - Jul 2019

Guangzhou, Guangdong, China

- Developed a full-stack **Android application** using **React Native** and **MVC** pattern with **Javascript** and **Java** to insert banner/interstitial ads into application
- Designed the advertisement information broadcast tool via **Scala Designer**, **Scala Player**, and **RFID**
- Build a Facial Recognition Embedded Application with **Tensorflow** and **Keras** with 98% recognition accuracy rate, and largely increased lab efficiency and accelerate the research progress

## SKILLS

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- Programming Languages: C/C++, Python, Matlab, Java, Javascript, Scala, QT
- Framework tools: Tensorflow, Pytorch, Keras
- Development tools: Visual Studio, Clion, Docker, Git, Pycharm, Anaconda, QT Creator
- Award: Second Prize Scholarship (awarded to top 10% students), First Prize in ACM School Competition