

Yutian Chen

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EDUCATION

BSc. Data Science and Machine Learning

CARNEGIE MELLON UNIVERSITY

Pittsburgh, PA | Sep 2021 - Now

High School Diploma

GUANGZHOU FOREIGN LANGUAGE SCHOOL

Guangzhou, China | Aug 2018 - Jun 2021

RESEARCH EXPERIENCE

MEDICAL IMAGE SEGMENTATION | [LINK](#)

Python, Computer Vision | Dec 2018 - Jan 2020

Proposed a new model that execute **image segmentation on cardiac MRI (cMRI) sequence**, then implement and test the performance of model on **ACDC Dataset** under supervision of **Professor Yiyu Shi** at Notre Dame University.

The model use 3D U-net as encoder and Bidirectional Convolution LSTM as decoder to integrate temporal correlation between frames of cMRI and reach accuracy of 86% on ACDC Dataset.

Implement the model and data pipeline from data normalization, augmentation to prediction, validation and result statistics using **PyTorch**, **TorchVision**, **SimpleITK** and **NumPy**.

WORK EXPERIENCE

CHACHA TECH | DATA SCIENTIST INTERN

Guangzhou, China | Jan 2021 - Apr 2021

- Performed identity matching on 2 Million + data entries across multiple platforms with overall matching rate of 90% and support incremental update.
- Perform image classification, enhancement and OCR using **PyTorch**, **PIL**, and **AWS Textract**
- Created a data pipeline that automatically perform image processing, unstructured data parsing and identity matching at speed of 100 entries/sec using **Airflow**, **AWS EC2**, **AWS S3**, **Python** and use vectorization for performance enhancement with **Numba** and **NumPy**.

PROGRAMMINGX | ORGANIZER, COINSTRUCTOR

Guangzhou, China | Jul 2020

- Organize a 7-day algorithm training camp with five TAs to help about 30 high school students prepare for USACO.
- Write lecture notes and coinstruct on data structures like binary index tree and segment tree.

PROJECTS

PERSONAL BLOG [↗](#)

A personal blog that post my own notes for papers and projects currently working on.

MAGC MAP [↗](#)

PYTHON, JAVASCRIPT, FLASK

A collaborative non-linear online document. Won the third place in Hack CMU 2021 (a Hackathone event) project. We design a lock system and synchronous system that allow incremental update between clients. The document support markdown and LaTeX.

2048 SOLVER [↗](#)

PYTHON, MACHINE LEARNING

Using traditional algorithms (greedy algorithm) and machine learning methods (game-state searching and probabilistic sampling), we try to build an agent that out-perform human on playing 2048 - a game that requires long-term logical planning, short-term greedy and includes random factor.

HIGH SCHOOL CS CLUB SITE [↗](#)

HTML, CSS, JAVASCRIPT, AWS

A club site with computer science notes and related resources. Deployed using GitHub Action and AWS Global CDN.

HONORS & AWARDS

Computer Science: USACO Platinum Contestant, Canadian Computing Competition 154/3400+

Mathematics: High School Mathematical Contest In Modeling Meritorious, AMC12 Top 5%

Physics: British Physics Olympiad, Top Gold (Top 2%)

SKILLS

Languages: Python, JavaScript, Java, SQL, React, Flask, HTML/CSS, Git, AWS, Linux, \LaTeX

Machine Learning: PyTorch, NumPy, SimpleITK, Neural Network, Computer Vision, Reinforcement Learning