Qingqiao Hu

Address: University of California, Los Angeles (UCLA)
Personal Website: Winston Hu (winstonhutiger.github.io)

EDUCATION

UCLA, Los Angeles, CA, U.S. 09/2022 - 06/2024

- Degree: Master of Science
- Major: Electrical and Computer Engineering
- Core Coursework: Linear Programming, Pattern Recognition, Learning Machines, Matrix Analysis, Large-Scaled Data Mining, Neural Signal Processing

Southern University of Science and Technology (SUSTech), Shenzhen, China 09/2017 - 06/2021

- Degree: Bachelor of Engineering
- Major: Computer Science; Overall GPA: 3.66/4.0
- Core Coursework: Calculus, Linear Algebra, Data Structure, Algorithm Design, Probability and Statistics, Digital Design, Computer Organization, Database System Principle, Discrete Math, Artificial Intelligence, Computer Network, Object-oriented Analysis and Design, Operating System, Software Engineering, Signal and System and Deep Learning
- Honors & Awards: 2nd Place Academic Scholarship in 2018; 3rd Place Academic Scholarship in 2020

PUBLICATION

Qingqiao Hu*, Hongwei Li*, Jianguo Zhang, *Domain-adaptive 3D Medical Image Synthesis: An Efficient Unsupervised Approach*, Accepted and to be appeared in the proceedings of International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), Springer, Cham, 2022

RESEARCH EXPERIENCE

***Remote Research Intern*, VLAA Lab, UCSC** 04/2023 - present

- Conducted research related to unsupervised/weakly supervised segmentation task learning from synthesis dataset.
- Explored the possibility of a diffusion model to generate high-quality synthesis dataset.

***Research Assistant*, CVIP Lab, Southern University of Science and Technology** 09/2020 - 06/2021

- Conducted research related to multi-rater uncertainty in medical image segmentation under the supervision of Prof. Jianguo Zhang
- Implemented a model of shared-encoder-multiple-decoder structure to capture the uncertainty of multiple annotations from different raters
- Utilized the data from QUBIQ challenge to demonstrate that our model performed much better than other SOTA models
- Summarized the research results and completed the bachelor thesis paper under supervision of Prof. Zhang
- Modified the research results and ready to submit our work to IEEE Transaction on Medical Imaging

***Research Assistant*, ARoS Lab, North Carolina State University** 07/2020 - 08/2020

- Completed an online research supervised by Dr. Edgar Lobaton from NCSU
- Implemented an end-to-end system based on Yolo (You Only Look Once) version 4 and Deep SORT (Simple Online and Realtime Track) which could detect and track people shown in thermal videos and improve both the recall and the precision by 10% in comparison with previous Yolo-version-3 model

- Fixed a bug (issue id: No.163) in a popular repository named tensorflow-yolov4-tflite, which made Yolo-tiny run on Android
- Won the Honorable Mention prize in our virtual online presentation to the NCSU community

***Research Assistant*, SCAI Lab, Southern University of Science and Technology** 06/2019 - 08/2020

- Did research on prediction of the future traffic flow speed in a city based on the history traffic flow data
- Cleaned plenty of raw traffic flow data crawled from the internet and tried to find the model that could fit in this scenario
- Implemented a graph convolutional network with a sequence-to-sequence feature extractor that could both take advantage of temporal and spatial information and the model to achieve 5 mean absolute percentage error using open-source dataset released by the California government
- Obtained over 90 marks in the final report of Innovation Project

***Participant*, Institute of Automation, Chinese Academy of Sciences Summer Camp** 07/2019 - 08/2019

- Acquired a great deal of knowledge in deep learning and computer vision, such as analysis of the color histogram of a photo and the method to train a deep CNN
- Conducted a project related to human iris recognition using open-source human iris data
- Implemented an iris recognition model using Efficient Net so as to achieve performance equivalent to the state-of-art model with less training cost
- Cooperated with other team members to write the final paper

PROJECTS

***Group Leader*, Bluetooth Communication System, SUSTech** 12/2020 - 01/2021

- Implemented a Bluetooth communication system on STM32 arm chip as the course project in Embedded System and Microcomputer Principle
- Divided work into small pieces, assigned tasks to team members and kept the pace of development
- Built the Bluetooth communication channel using USART and AT command
- Designed display style on small LCD screen to show the chat messages

***Group Leader*, Online Text Sharing Editing, SUSTech** 09/2019 - 12/2019

- Implemented an online sharing text-editing website as the course project in Object-Oriented Analysis and Design class
- Designed and implemented the server end by using the Django server-end framework and the Operation Transfer Algorithm for multiple user editing
- Improved my design skills, practical abilities along with teamwork skills

***Independent Researcher*, Simple CPU Implementation, SUSTech** 05/2018 - 07/2018

- Implemented a single core CPU alone with low clock speed by using Verilog, Hardware Description Language (HDL) on a FPGA chip
- Synthesized successfully all parts, such as ALU and code fetching components
- Verified the function of the CPU by writing MISP code to control the LED lights on the developing board

TEACHING EXPERIENCE

***Teaching Assistant*, Southern University of Science and Technology** 07/2021 - 08/2021

- Worked as one of the teaching staff in the Artificial Intelligence Summer Camp, at CSE Department,

SUSTech

- Taught high school participants some concepts of Data Mining and Artificial Intelligence
- Helped them implement a data visualization website using a Covid-19 patient number dataset from John Hopkins University

***Teaching Assistant*, Southern University of Science and Technology** 09/2020 - 01/2021

- Assisted with Dr. Yuqun Zhang's course "Object-Oriented Analysis and Design"
- Engaged in curriculum design such as designing the database online judge system project for students, supervised their progress during the whole semester, and credited their final work at the end of semester
- Be responsible for designing and correcting homework

WORKING EXPERIENCE

***Research Assistant,* Prof. Jin Zhang's Lab, Southern University of Science and Technology** 07/2021 - 01/2022

- Conducted research related to human activity recognition using FMCW radar
- Implemented a few-shot learning model with limited amount of radar data to classify data from unseen classes
- Used a cross-domain technique with a few collected and labeled data to adapt the model to a new environment
- Summarized the research results and about to be ready to submit the work to IEEE Internet of Things Journal

***Internship*, Sino Smart, Shenzhen** 01/2021 - 02/2021

- Worked as an intern in Sino Smart, Shenzhen
- Implemented an algorithm to detect the X-ray images of SMT materials plates based on the constraints of position information

VOLUNTEER & OTHER EXPERIENCE

***Participant*, Education First Summer School, Washington** 01/2018 - 07/2018

- Took some English courses in the EF International School, and obtained a C1 level certification
- Greatly improved my English skills in speaking and listening

***Volunteer*, The 31st China Olympic Chemistry Competition, Shenzhen** 10/2017

- Provided services for high school competitors coming to SUSTech

ADDITIONAL INFORMATION

- Computer Skills: Java, Python, C/C++, Verilog HDL, Matlab, Kotlin, Latex, Pytorch
- Language Skills: Chinese Mandarin (native), English (fluent)
- Interests: Long-distance Running, Listening to Music, Watching Sci-Fi Movies, Writing Sci-Fi Stories