Mingqian Liao

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Personal Profile

I am a junior at the Southern University of Science and Technology (SUSTech), majoring in Computer Science and Technology, and studying in the Turing class of my major. I am currently on an exchange program at the University of California, Berkeley, from January to May of this year, during which I took **computer vision, deep learning, machine learning, and operating system**. I am seeking a summer research opportunity in machine learning area. My goal is to apply my machine learning skills and knowledge to contribute to cutting-edge research and learn from experts in the field.

I have a strong interest in machine learning and deep learning, and I have been working in our iMED lab since the first semester of my sophomore year to study the application of deep learning to medical imaging. **As a proactive and dedicated researcher, I led my group to achieve A's in both semesters of the research course, which was recognized by the grading professors.** I have also represented the university and achieved good results in the international supercomputing competitions of HPC-AI and ASC22.

My overall GPA is 3.74/4, and my sophomore GPA is 3.83/4 and my junior GPA is 3.94/4. **I earned A and A+ in Machine Learning, Probability and Mathematical Statistics, Software Engineering and Computer Operating Systems, etc.** I have also been a student assistant for two semesters in C/C++ Programming and Computer Networks. My skills include proficiency in programming languages such as Python, Java, and C++, as well as experience in deep learning frameworks such as PyTorch.

Education

University of California, Berkeley
Berkeley, USA

Undergraduate
Jan 2023 - Current

- **Courses:** Machine Learning, Deep Learning, Graduate Computer Vision, Operating System

Southern University of Science and Technology
Shenzhen, China

Undergraduate
Sept 2020 - Current

- 2nd Prize in SUSTech Excellent Student Scholarship
- Distinguished Student Assistant
- **Courses:** Machine Learning, Artificial Intelligence, Compilers, Operating Systems, Computer Network, Computer Organization, Software Engineering, Data Structure, Probability and Mathematical Statistics, Algorithm Design, C/C++ Program Design, Introduction to Artificial Intelligence

Zhanjiang NO.2 High School
Zhanjiang, China

High School
Sept 2017 - June 2020

- Graduated with Distinction 743/~400,000
- Specialised in Maths, Physics, Chemistry, and Biology

Experience

iMED Lab in Southern University of Science and Technology
Shenzhen, China

Research Student
Jul 2021 - Current

- Collaborated with a three-person team on the topic of unsupervised bottom-of-the-eye surgical depth estimation based on microscopic surgical videos

Student Supercomputing Club of Southern University of Science and Technology
Shenzhen, China

Officer member
Jan 2022 - Current

- Organize the university-level supercomputing competitions
- Recruit new students for club
- Select students to represent the university in supercomputing competitions with us

Southern University of Science and Technology
Shenzhen, China

Student Assistant in CS305 Computer Network course
Sep 2022 - Feb 2023

- Checking Lab exercises, and answering questions from students in class and after class
- Designing and grading Assignments for the course

Southern University of Science and Technology
Shenzhen, China

Student Assistant in CS205 C/C++ Program Design course
Feb 2022 - Feb 2023

- Checking Lab exercises, and answering questions from students in class and after class.
- Designing and grading Assignments for the course

Projects

Unsupervised Bottom-of-the-eye Surgical Depth Estimation Based on Microscopic Surgical Videos

Shenzhen, China

iMED lab in Southern University of Science and Technology

Jan 2022 - Current

- Build a virtual surgical instrument and fundus database
- Conduct a series of experiments and optimizations to migrate the model in the self-driving depth prediction scene into the surgical scene
- Design a model to output the corresponding depth video from the input fundus surgery video

Deep-Learning-Based DNA Fast Decoding

Singapore

HPC-AI Advisory Council, National Supercomputing Centre (NSCC) Singapore, and National Computational Infrastructure (NCI) Australia

Jan 2022 - Nov 2022

- Design a model to predict transcription factor's binding site based on the input DNA sequence and DNase-sequence
- Improve the model using the key part of UNet and Leopard and use horovod to train the network distributedly

Neural Network for self-driving data augmentation

Shenzhen, China

Southern University of Science and Technology

Nov 2022 - Jan 2022

- Augment the automated driving dataset using the Stable Diffusion model as well as the Textual Inversion model
- Conduct experiments on the prompt to guide the direction of augmentation, and on the sampling method to augment

Matrix Class and CNN forward propagation Implementation in C++

Shenzhen, China

Southern University of Science and Technology

Sep 2021 - Dec 2021

- Build a relatively complete calculation library by referring to the Class cv::Mat in OpenCV
- Support matrix of different basic data types
- Implement the region of interest (ROI) to avoid hard copying of memory
- Implement a CNN model that can predict if the input image is a person (upper body only) or not
- Conduct a Series of performance tests, comparisons and optimizations carried out on the X86 and ARM platforms

Honors & Awards

2023	**Distinguished Student Assistant**, Student Assistant in Computer Network	*SUSTech*
2022	**Huawei "Intelligent Pedestal" Industry-Education Integration Collaborative Education Project Scholarship**, Excel in Machine Learning course	*Shenzhen*
2022	**Huawei "Intelligent Pedestal" Industry-Education Integration Collaborative Education Project Scholarship**, Excel in C/C++ Program Design course	*Shenzhen*
2022	**First Prize**, ASC Student Supercompute Challenge	*Asia Supercomputer Community*
2022	**Second Place**, 2022 APAC HPC-AI Competition	*Singapore*
2022	**Special Prize**, The 9th "League Cup" Undergraduate English Writing Contest	*Guangdong Province*
2022	**The 2nd prize**, SUSTech Excellent Student Scholarship	*SUSTech*
2022	**The 3rd prize**, Mathematical Contest in Modeling	*COMAP*
2021	**The 3rd prize**, SUSTech Excellent Student Scholarship	*SUSTech*
2020	**Special Prize**, Freshman Scholarship, ranked 2/1097 among all the freshmen	*SUSTech*

Skills

Programming	Python(Numpy, Pytorch), C/C++, Java, SQL, Vue2
Soft Skills	Teamwork, Time Management, Documentation, Presentation

Interests

Accordion	I like to play the accordion very much, playing the accordion makes me relaxed and refreshed
Table Tennis	I love table tennis and have met many good friends through this sport
Running	I love running and will run three or four times a week to enjoy the sweaty feeling that running brings, it makes me more focused
Music	I love all styles of music, both Eastern and Western, classical and pop, and I also took a lot of art electives at school