

XINYI ZHOU

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EDUCATION

Southern University of Science and Technology

Sep 2018-Present

Bachelor of Engineering, Computer Science and Technology. GPA 3.74/4.00

RELEVANT COURSEWORK:

- Data Structure and Algorithm Analysis, Computer Networks, Embedded System and Microcomputer Principle, Operating Systems, Computer Organization
- Probability and Statistics, Principles of Database Systems, Algorithm Design and Analysis, Artificial Intelligence, Multimedia Information Processing, Introduction to Big Data Science, Deep Learning, Discrete Mathematics
- Software Engineering, C/C++ Program Design, Object-oriented Analysis and Design

RESEARCH EXPERIENCE

National University of Singapore, Singapore

Aug 2021-Dec 2021

Research Intern from Remote, Research Group of Chee-Kong Chui, PhD

Surgical Workflow Recognition

- Conducted a literature review on surgical workflow recognition using machine learning methods
- Labeled an in-house ophthalmic surgical video dataset to be used in future experiments
- Based on public datasets, reproduced state-of-the-art methods and compared their performance
- Responsible for writing a research report

Southern University of Science and Technology, Shenzhen

Dec 2019-Aug 2021

Undergraduate Researcher, Intelligent Medical Imaging Lab (Principal Investigator: Jiang Liu, PhD)

Depth Estimation for ophthalmic surgical microscopic images

- Applied successfully for the National College Students' Innovative Entrepreneurial Training Plan Program (Grant No. 202114325010) as the primary investigator
- Collected an ophthalmic surgical microscopic image dataset
- Developed a deep-learning-based all-in-focus image generation model as a pre-processing technique for depth estimation
- The related Chinese patent (Application number: 2021110685310) is under review
- The related paper has been accepted by the *IEEE International Symposium on Biomedical Imaging (ISBI) 2022* for presentation

Southern University of Science and Technology, Shenzhen

Sep 2019-Dec 2019

Undergraduate Researcher, Intelligent Medical Imaging Lab (Principal Investigator: Jiang Liu, PhD)

Juvenile Ocular Axial Length Prediction Based on Clinical Data via Attention Mechanism

- Conducted a literature review on tabular data analysis
- Reproduced and improved state-of-the-art attention-based algorithms in predicting ocular axial length
- Made a poster that won the second prize in the Group Project Presentation

RELEVANT WORK EXPERIENCE

National Innovation Center for Advanced Medical Devices

Nov 2021-Present

Industrial Service Intern & Research Intern

- Wrote a Requirement Specification of a Wireless Monitoring System for Emergency Life Support Equipment
- Conducted market research on Clinical Trial Management System and Decentralized Clinical Trials
- Responsible for developing a machine-learning algorithm to predict the appearance of hemorrhagic shock in rats

PUBLICATION

Xinyi Zhou, Louying Hao, Qiushi Nie, Yingquan Zhou, Lihui Wang, Yan Hu*, Jiang Liu, A Novel Multi-focus Fusion Network for Retinal Microsurgery, *IEEE International Symposium on Biomedical Imaging (ISBI) 2022* (Accepted)

PROJECT EXPERIENCE

Prediction of IDH1 Gene Mutation in Brain Tumor Patients Based on Multimodality MRI Data

March 2021-May 2021

Machine Learning Engineer

- Developed a multi-task deep-learning-based model for gene mutation prediction
- Pretrained some layers with semantic segmentation task, handled the imbalanced dataset to boost the performance of our model

Code Contribution for the Open Source Project JsonPath

Feb 2021-May 2021

Code Contributor (<https://github.com/json-path/JsonPath>)

- Conducted reverse engineering to understand the components of the project
- Fixed two reported issues that passed the code review, the solutions were merged into the next release version

A WeChat Mini Program for Color-Blind People Cooperated with Tencent

Feb 2021-May 2021

Front-end Engineer; Project Manager (https://github.com/CindyChow123/Multimedia_project_2021_spring)

- Coordinated the progress of design, development, and communication to ensure the completion of the task
- Developed a high-speed algorithm for color space conversion to demonstrate how color-blind people see the world
- Designed and implemented the UI to demonstrate the difficulties that color-blind people face in recognizing objects

Game Platform Website

Sep 2020-Dec 2020

Front-end Engineer (https://github.com/CindyChow123/GameCenter_2020_fall_ooad)

- Participated in the construction of a website acting as a platform for game demonstration, downloading, and commenting using Vue.js (front-end) and SpringBoot (back-end)
- Designed and implemented the UI of the user center and developer service page

Epidemiological Analysis of COVID-19 cases in Korea with Machine Learning

April 2020-June 2020

Data Analyst

- Visualized the distribution of patients, spread of disease geographically to understand the development of the pandemic
- Classified Korean cities by epidemic risks of their population through KMeans to provide insights for control measures
- Predicted patients' recovery time and epidemic trend with regression analysis and the SIR Model for Spread of Disease

Myopia Prevention Mobile Application Business Plan

July 2019-Aug 2019

Team CEO; *Competition Event for International Business Plan Competition (IBPC) 2019*

- Led the product design process including brainstorming and user profiling
- Completed a business plan by investigating the market and competitors
- Presented a software demo that could blur the screen when the user's face got too close to it

Wheelchair Acceleration Device for Elder People

June 2019-July 2019

User Researcher, Material Engineer; *Da Vinci Challenge Camp-2019*

- Conducted user research through field trips to nursing houses and questionnaires to understand elder's needs and opinions for present wheelchairs and determine the product scope
- Selected the suitable materials for implementing the device to ensure user safety and comfort
- Presented a usable demo that could be easily attached to a wheelchair for acceleration and unloaded to recharge

HONORS & AWARDS

2020-2021 Merit Student Scholarship: First Class (5%), SUSTech	Oct 2021
Group Project Presentation: The Second Prize, Department of Computer and Engineering, SUSTech	May 2021
Mathematical Contest in Modeling: Honorable Mention	Apr 2021
2020 Outstanding Volunteer, SUSTech	Jan 2021
2019-2020 Merit Student Scholarship: Third Class (15%), SUSTech	Nov 2020
2020 "FLTRP·ETIC Cup" English Speaking Preliminary Contest: The Second Prize Award, SUSTech	July 2020
Academic Progress Award of Shude Residential College, SUSTech	Dec 2019
The UNLEASH2019 Innovation Lab: Volunteer, UNLEASH2019	Nov 2019
Da Vinci Challenge Camp-2019: The Best Team Work, SUSTech	Aug 2019
International Business Plan Competition (IBPC) 2019, "Healthier Living": The Second Runner-up Team of "Best Investor Pitch" Award, SUSTech & HKUST & HES-SO	Aug 2019

OTHER COURSES AND ACTIVITIES

Oxford Study Abroad Programme	Jan 2022-Jan 2022
● Artificial Intelligence and Machine Learning, Oxford Online Courses, Winter 2022 (Instructor: Naeemullah Khan, The University of Oxford)	
Innovation & Practice Programme for the Cultivation of High-level Internationalized Talents	Oct 2021-Nov 2021
● Business, Entrepreneurship, and the Sustainable Development Goals (Instructor: Kenneth Amaeshi, The University of Edinburg): Final Scores 96.8/100	
● Big Data and Public Health (Instructor: Ramin Ramezani, The University of California, Los Angeles): Final Scores 100/100	
Emergency Rescue Association, Southern University of Science and Technology	Nov 2018-May 2020
Minister of the Theory Department	
● Established and improved the emergency skill assessment system for the team to maintain the technical level of team members	
● Produced a revised edition of the First Aid Manual to promote students' awareness of rescue skills	
● Completed the AHA Heartsaver First Aid CPR AED Program	
Student Union of Shude College, Southern University of Science and Technology	Nov 2018-Apr 2019
Core Member of Project Department	
● Organized the "Deep Blue" Charity Sale to raise money and donate them to people in need	
● Chaired the Girls' Day Celebration Event with homemade food, gift cards, and flowers to give girls the best blessing	
STEAM+ Maker Community Services, Southern University of Science and Technology	June 2019-July 2019
Course Mentor	
● Collaborated with STEAM+ Maker group to prepare and deliver lectures about Scratch for elementary students in the neighborhood community, including 3D printing, graphic programming, and mBot Robots	
● Cultivated the interest and motivation of Computer Science for children from age 6 to 12	

SKILLS & LANGUAGES

Skills: PowerPoint (Advanced), Python (Advanced), SQL, Java, C++, Matlab, Verilog.

Languages: Mandarin (Native), English (CET-4: 638, CET-6: 629, TOFEL 107).

Certificates: Primary First-Aider in Emergency Medical Service issued by Shenzhen Center for Pre-hospital Care.