

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

Southern University of Science and Technology, Shenzhen

Sep 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 preprocessing technique for depth estimation
- Completed a manuscript and a Chinese patent (Application number: 2021110685310) that are under review

RELEVANT WORK EXPERIENCE

National Innovation Center for Advanced Medical Devices

Dec 2021-Present

Industrial Service Intern & Research Intern

- Responsible for developing a machine learning algorithm to predict the appearance of Hemorrhagic shock
- Responsible for writing a Requirement Specification of a Wireless Monitoring System for Emergency Life Support Equipment.

PUBLICATION

Xinyi Zhou, Louying Hao, Qiushi Nie, Yingquan Zhou, Lihui Wang, Yan Hu*, Jiang Liu, A Novel Multi-focus Fusion Network for Retinal Microsurgery, Submitted to *IEEE International Symposium on Biomedical Imaging, 2021* (Under Review)

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

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 Blinded 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 the color composition of color blinded people's world view.
- Designed and implemented the UI to demonstrate the difficulties that color blinded 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 can be easily attached to wheelchair for acceleration and unloaded to recharge

HONORS & AWARDS

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| 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 | Feb 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

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|---|-------------------|
| Innovation & Practice Programme for the Cultivation of High-level Internationalized Talents | Oct 2021-Nov 2021 |
| <ul style="list-style-type: none"> ● 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 | |
| <ul style="list-style-type: none"> ● 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 | |
| <ul style="list-style-type: none"> ● 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 | |

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.