

# Zexin FENG

+86 18611092958 | [fengzx2021@mail.sustech.edu.cn](mailto:fengzx2021@mail.sustech.edu.cn) | <https://zexinfeng-cn.github.io/>

## EDUCATION

**Southern University of Science and Technology** | Shenzhen, China **09/2022-06/2025 (expected)**

*B.Eng. in Computer Science, Major GPA: 3.85/4.0*

**Core Courses:** Discrete Mathematics, Probability and Statistics, Principles of Database Systems, Digital Logic, Principles of Computer Composition, Data Structures and Algorithms Analysis, Artificial Intelligence.

## AWARDS

- **China National Scholarship** (2024), **Top 0.2%**
- **School Motto Scholarship "Truth" Special Award** (2024)
- Outstanding Student (2023), Top 20%
- Best Progress Award (2022), Semester Progress Award (2022), Academic Year Progress Award (2023)

## PUBLICATIONS

- [1] **Z. Feng**, N. Zeng, J. Fang, X. Wang, X. Lu, H. Meng, J. Liu. "Flattening Singular Values of Factorized Convolution for Medical Images", *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)* April 2024

## RESEARCH EXPERIENCE

### **Xiaohui Xie's Lab**

**Irvine, California**

*Undergraduate Research Assistant, supervised by Prof. Xiaohui Xie*

#### **OCTA Generation from OCT by Diffusion and Projection**

**09/2024-Present**

- Addressed the consistency and complementarity between OCT B-scans and OCTA B-scans
- Proposed a novel workflow for OCT - OCTA translation using Diffusion
- Designed a ControlNet with image label prompt to synthetic OCTA data
- Utilized contrastive learning on image label embedding to improve the explainability of the model

### **iMED Intelligent Medical Imaging**

**Shenzhen, China**

*Undergraduate Research Assistant, supervised by Prof. Jiang Liu*

#### **CNN Optimization for Efficient in Medical Image Processing**

**05/2023-09/2023**

- Addressed the limitations of factorized convolutional in CNNs by proposing SFConv, a method to enhance expressiveness while reducing complexity
- Demonstrate 98% of parameter compression with performance maintenance on 2 public datasets
- Published a conference paper at ICASSP 2024 ([1])

#### **Enhancing Retinal Vessel Segmentation in OCTA Images**

**12/2023-04/2024**

- Identified differences in vessel segmentation tasks in OCTA images and designed the RRA-Net with resolution restoration and vessel guidance
- Developed a vessel topologizing algorithm and novel metrics to refine the assessment of small vessels, including adjustments to Dice scores
- Demonstrated the effectiveness of the proposed methods and evaluation metrics across three distinct datasets
- Complete, to be submitted to ICME 2025

## COMPETITION & PROJECTS

### **Climbing Plan**

**10/2024-Present**

- Funded by Guangdong Provincial Science and Technology Innovation Strategic

- Utilizing temporal eye movement medical knowledge to improve diagnosis algorithm of diabetic retinopathy
- Designing a Time-Series Model to combine experts' eye movement with CFP images
- Collected more than 100,000 CFP images with diabetic retinopathy labels

#### **Ophthalmology Diagnosing Platform**

**04/2024-Present**

- Funded by National College Students' Innovation and Entrepreneurship Training Program
- Designing an Ophthalmology diagnosing platform website to assist clinic doctors and boost the speed of diagnosis by providing multiple model results
- Improving segmentation algorithms for CFP and OCTA

#### **3<sup>rd</sup> Prize, China Collegiate Computing Contest-AI Innovation Contest**

**05/2023-06/2023**

- Developed an eye disease consultation system using Baidu Paddle, and built a dataset for language model finetuned in Medical Diagnosing
- Built medical record system, tracking the timeline of patient medical records
- Designed a framework, integrating Multi-Modal Language Model with LLMs, providing natural language output of disease analysis and diagnosis

### **SKILLS**

**Languages:** Chinese (native), English (fluent)

**Programming:** Java, Python (PyTorch, NumPy, etc.), C/C++, Verilog, Shell (Linux Shell), LaTeX



Transcript of Academic Record

Family Name: Feng Student ID: 12110104 Residential College: Zhixin College  
Given Name: Zexin Date of Enrollment: 22/08/2021 Department: Department of Computer Science and Engineering  
Gender: Male Duration: 4years Program: Computer Science and Technology  
Date of Birth: 24/10/2002 Date of Graduation: 2025.06.30 ID No.: 420606200210243015  
Now:

Course	Credit	Letter Grade	Pct Grade	Categ	Course	Credit	Letter Grade	Pct Grade	Categ
Academic Year2021-2022 Fall Semester									
Military Theory	2	P	P	GR	General Physics B (I)	4	B-	82	GR
Physical Education I	1	B	85	GR	Military Skills	2	P	P	GR
Calculus I A	4	D	65	GR	Introduction to Computer Programming A	3	C+	77	GR
Linear Algebra A	4	D+	67	GR	General Chemistry B	3	C	76	GE
SUSTech English I	4	B+	89	GR	Writing and Communication Skills	2	P	P	GR
Academic Year2021-2022 Spring Semester									
The Principles of Marxism	2	A+	97	GR	General Physics B (II)	4	C+	79	GR
Practice Course of Brief History of Modern China	1	P	P	EC	Calculus II A	4	A	96	GR
Practice Course of Introduction to Mao Zedong Thought and Theoretical System of Socialism with Chinese Characteristics	2	P	P	EC	Introduction to Life Science	3	B+	89	GR
Experiments of Fundamental Physics	2	A	93	GR	Practice Course of Morality and Rule of Law	1	P	P	EC
SUSTech English II	4	A	93	GR	*****				
Academic Year2022-2023 Fall Semester									
Physical Education III	1	A	95	GR	Data Structures and Algorithm Analysis	3	A-	91	MR
Digital Logic	3	A-	91	MR	Probability and Statistics	3	B	83	MR
Morality and Rule of Law	2	A	95	GR	SUSTech English III	4	A-	92	GR
Principles of Database Systems	3	A	94	MR	*****				
Academic Year2022-2023 Spring Semester									
Physical Education II	1	A	93	GR	Algorithm Design and Analysis	3	A-	91	MR
The Outline of Modern and Contemporary History of China	2	A	93	GR	Mao Zedong Thought and Introduction to the Theoretical System of Socialism with Chinese Characteristics	3	A+	97	GR
Situation and Policy	2	A-	91	GR	English for Academic Purposes	2	A	93	GR
Physical Education IV	1	A+	98	GR	Computer Networks	3	A	95	MR
Education on the Hard-working Spirit	1	P	P	GR	Discrete Mathematics	3	A-	91	MR
Computer Organization	3	A	93	MR	*****				

Date of Issue: July 3, 2024

Page 1 of 2



Transcript of Academic Record

Family Name: Feng Student ID: 12110104 Residential College: Zhixin College  
Given Name: Zexin Date of Enrollment: 22/08/2021 Department: Department of Computer Science and Engineering  
Gender: Male Duration: 4years Program: Computer Science and Technology  
Date of Birth: 24/10/2002 Date of Graduation: 2025.06.30 ID No.: 420606200210243015

Now:

Course	Credit	Letter Grade	Pct Grade	Categ	Course	Credit	Letter Grade	Pct Grade	Categ
Academic Year2023-2024 Fall Semester									
Introduction to Chinese Information Processing	2	A+	97	GE	C/C++ Program Design	3	A+	100	ME
Embedded System and Microcomputer Principle	3	A+	98	MR	An Introduction on History of Science and Civilization	2	A+	97	GE
Frontier Seminars in Computer Science and Technology I	1	P	P	MR	Artificial Intelligence	3	A-	90	MR
Introduction to Artificial Intelligence	2	A+	99	GE	Physical Education V	0	C	73	GR
Group Projects I	2	A	93	MR	*****				
Academic Year2023-2024 Spring Semester									
Operating Systems	3	A+	98	MR	Group Projects II	2	A	94	MR
Frontier Seminars in Computer Science and Technology II	1	P	P	MR	Physical EducationVI	0	C	75	GR
Software Engineering	3	A+	98	MR	Multimedia Information Processing	3	A+	97	ME

Credits Achieved: 125 ( credits required for graduation: 138 ) Grade Point Average: 3.66

Student Ranking: 92/189 Weighted Average Score: 89.77

Date of Issue: July 3, 2024

Page 2 of 2