LU ZHU

(86) 150 0836 9460 | lucy_llllll@163.com

EDUCATION

Nankai University , School of Computing **Tianjin, China**

Bachelor of Engineering in Computer Science and Technology *Sep 2020 – June 2024*

- **GPA:** 3.74/4.0
- **Awards:** CCF CSP Computer Proficiency Test (**National**), National College Innovation and Entrepreneurship Program & Innovative Research (**University, 2nd prize**)

PUBLICATION

An Empirical Understanding of Black Screen Abnormality in Android Multi-view

First Author, published in 2023 IEEE the 6th International Conference on Computer and Communication Engineering Technology (IEEE CCET 2023), Paper ID: BE0030.

An Empirical Understanding of Code Clone Detection by ChatGPT

Second Author, published in 2023 6th International Conference on Data Science and Information Technology (IEEE DSIT 2023), Paper ID: DSIT 2023-D023.

RESEARCH EXPERIENCES

Research on Quantitative Method of Tertiary Lymphoid Structure Based on Deep Learning *Oct 2023– Present*

Independent Project (Graduation Project)

- Set up the automatic lymphocyte density map generation framework, including large pathological image cropping, tumor region recognition by ResNet18, lymphocyte segmentation by U-Net, and lymphocyte density map generation by computer graphics method;
- Made mask data set and maturity quantification for TLSs, including annotation rule design, using lmageScope software to annotate TLSs by doctor, reading XML documents and generating special TLSs data set by program;
- Designed and built TLSs quantization framework, including TLSs segmentation by U-Net, calculating TLSs area by computer graphics method, and quantifying the maturity degree of type 1, 2 and 3 according to threshold values

Research on Multi-View Exception Problem of Mobile Application *Mar 2022 – Jul 2023*

Supervised by Prof. Chenkai Guo, Member of the Intelligent Software Engineering Laboratory

- Conducted multi-view anomaly testing on domestic and foreign application markets, accumulated over a thousand test anomalies, and summarised six types of resource conflict anomalies and their subcategories;
- Wrote a testing app using Android Studio, an automated testing prototype based on Python+UIautomator2, Editor, Appium frameworks, and used adb to connect to the real machine for debugging;
- Studied the underlying causes of anomalies, including Android Multi-resume mechanism, and proposed code solutions

Research on Code Clone Detection by ChatGPT *Mar – Jul 2023*

- Constructed a specific dataset covers multiple types of code data and conduct the first empirical study in the clone detection task for ChatGPT on both source code and binary code;
- Found that ChatGPT can successfully detect the code clone and accurately explain the code semantics for most simple cases, but gets limited performance in complex binary code scenarios

WORK EXPERIENCE

Lenovo Group Ltd **Beijing, China**

AI Intern *May - Jul 2023*

- Participated in service construction based on FastAPI framework, integrated NLU algorithm and model into intelligent question-answering robot service to realize customer intention recognition functions;
- Proceed massive corpus data of various countries, and unified training was carried out through the corpus automatic training platform to realize classification analysis of data and mining hidden rules;
- Used Python to train the NLU model on the cloud server and analysed the training results

SKILLS

Language: Chinese(Native speaker), English(IELTS 7)

Programming Languages & Frameworks : C++, Python, MATLAB, SQL, Pytorch, Django, Flask, FastAPI

PATENTS

A System and Method for Tertiary Lymphoid Structure Data Annotation Based on Lymphocyte Density Maps, *unauthorized*

This invention proposes a system and method for tertiary lymphatic structure (TLSs) in H&E pathological images, reduces the cost of data annotation, and provides help for clinical doctor diagnosis and patient prognosis treatment.

南開大學
Nankai University

Undergraduate Academic Transcript

Name : Zhu Lu	Student ID : 2013635	Admission Date : 2020.09	Length of Schooling : 4 Years
Department : College of Computer Science		Major : Computer Science and Technology	

Course Title	Score	Credit	Grade Point
Fall 2020			
High Level Language Program Design2-1	81	3.5	3.3
College English Ⅰ A	86	2.5	3.7
Military skill training	95	2.0	4.0
Education of Ideology and Morality and Introduction to the Law	83	2.5	3.3
Free Combat Beginner's Class	90	1.0	4.0
Linear Algebra	90	4.0	4.0
Integration for One-variable Functions (Advanced)	87	3.0	3.7
Differentiation for One-variable Functions (Advanced)	97	3.0	4.0
Traditional Chinese Academic	80	2.0	3.0
Spring 2021			
Field Theory and Infinite Series (Advanced)	86	3.0	3.7
Basic Physics Experiment	88	2.0	3.7
College Physics (1)	90	4.0	4.0
Fundamentals of Electric Circuits	78	3.5	3.0
Multivariable Calculus (Advanced)	97	3.0	4.0
High Level Language Program Design2-2	82	2.5	3.3
College English Ⅱ A	90	2.5	4.0
Military Theory	94	2.0	4.0
Introduction and tutorial to the pop music	97	2.0	4.0
Basic Principles of Marxism	79	3.5	3.0
Relieving stress and self adjustment	P	1.5	/
Dietary Nutrition and Disease Prevention	W	2.0	/
Badminton Beginner's Class	91	1.0	4.0
Guidance of Major cognition	P	1.0	/
Fall 2021			
Python programming	85	2.5	3.7
The Rise and Fall of the Great Powers	W	2.0	/
On the practice of entrepreneurship risk management for College Students	P	2.0	/
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Course Title	Score	Credit	Grade Point
College Chinese	95	2.0	4.0
Probability and Mathematical Statistic	84	4.0	3.3
Advanced English I	90	2.0	4.0
Experiments of Basic Life Science	W	1.0	/
Frontiers Technology in Computer Science	89	1.0	3.7
Discrete mathematics	91	4.0	4.0
Data Structure	82	3.5	3.3
Database Technology and Application	99	2.0	4.0
Digital Logic	92	3.5	4.0
Digital Signal Processing	83	2.0	3.3
Essentials of the Modern History of China	86	2.5	3.7
Spring 2022			
Introduction to Parallel Programming	94	2.5	4.0
Principles of Computer Organization	97	3.5	4.0
Visual Technology Basis	82	2.5	3.3
Mao Zedong's Method of Leadership	92	2.0	4.0
Introduction to Mao Zedong's Thoughts and the Theory of Socialism with Chinese Characteristics	87	3.5	3.7
The Principle of Embedded System	88	3.5	3.7
Introduction to Artificial Intelligence	92	2.5	4.0
Software Security	87	2.5	3.7
Practical English Linguistics	86	2.0	3.7
Database System	92	3.5	4.0
Introduction to Algorithms	84	3.5	3.3
Tai Chi Beginner's Class	94	1.0	4.0
Fall 2022			
Principles of Compilers	91	3.5	4.0
Operating System	93	3.5	4.0
Contemporary American Diplomacy	97.2	2.0	4.0
Internet Database Development	94	1.0	4.0
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Official Seal:
Issue Date: 2024-06-21

南開大學
Nankai University

Undergraduate Academic Transcript

Name : Zhu Lu	Student ID : 2013635	Admission Date : 2020.09	Length of Schooling : 4 Years
Department : College of Computer Science		Major : Computer Science and Technology	

Course Title	Score	Credit	Grade Point
Computer Architecture	91	3.5	4.0
Computer Networks	82	3.5	3.3
Basketball Beginner's Class	88	1.0	3.7
Project Training and Practice	89	2.0	3.7
Introduction to XI Jinping thought on Socialism with Chinese Characteristics for the New Era	94	2.0	4.0
Principle of Information Retrieval System	95	2.5	4.0
Spring 2023			
Innovative Research and Training	P	1.0	/
Computer system design	93	2.0	4.0
Software Engineering	91	2.5	4.0
Deep Learning and Its Applications	83	2.5	3.3
Data Security	91	2.5	4.0
Spring 2024			
Graduation Thesis	91	6.0	4.0
Practical courses on improving public morality and all-round capability	P	2.0	/
Situation And Policy	P	2.0	/
---End of Transcript---			

Course Title	Score	Credit	Grade Point

Earned Credits : 163.5

Cumulative Weighted Average: 88.86/100 GPA: 3.74/4

南开大学 成绩证明专用章

Official Seal

Issue Date: 2024-06-21