Chuyue Liao

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Education Background

Nanjing Normal University, China Sep. 2021 - Jun. 2025 (expected)

B.Eng., Computer Science and Technology

Overall GPA 89.45/100, Major GPA 90.98/100

Selected Courses:

Discrete Mathematics	99/100	Java Language Programming	97/100
Advanced Mathematics A1	96/100	Advanced Language Programming	97/100
Computer Organization and Architecture	96/100		

Research Interests

AI for Science, Computer Vision, Machine learning

Research Experiences

KOMABA (Knowledge-Oriented Machine learning and Artificial intelligence for Big data and Analytics lab), Nanjing Normal University June. 2023-Present

Core Participant

Advisor: Prof. Yanhui Gu

Research Projects:

Study on the Structure and Properties of Protein-Ligand Complexes

- Swiftly screening the best ligands and docking poses often leads to long processing times or loss of molecular information. Thus, inspired by the search for the top-k semantically similar sentences in the field of Natural Language Processing (NLP), I contributed to the development of the MapLE method, a general framework for Matching molecular analogues promptly with Low computational resources by multi-metrics Evaluation. This approach integrates various similarity metrics and introduces a progressive prompt evaluation technique to expedite the screening process. Experimental validation on a public biomolecular dataset confirms the effectiveness and efficiency of this strategy.

JMRH Key Laboratory of 3D Space Modeling and Simulation, Institute for Artificial Intelligence, Nanjing Normal University Oct. 2022-May. 2023

Core Participant

Advisor: Prof. Xiaojun Qian

Research Projects:

River Channel Embankment Seepage Detection

- In the leakage detection part based on infrared thermal images, due to uneven heating of the dam surface and the susceptibility of infrared thermal imaging technology to environmental factors during data acquisition, the overall imaging quality is low, severely affecting the accuracy of dam seepage point identification. To address these issues, I participated in designing a new method for dam seepage point detection based on infrared enhancement. By analyzing the characteristics of infrared image data and utilizing morphological reconstruction and automatic thresholding methods, it extracted the regions of minimum temperature in the infrared thermal images to construct a high-precision leakage identification model for dam infrared images. This model has now been applied to a collaborative project with the Jiangsu Provincial Department of Water Resources.

PUBLICATION

Conferences:

MapLE: Matching Molecular Analogues Promptly with Low Computational Resources by Muti-Metrics Evaluation

- Xiaojian Chen, **Chuyue Liao**, Yanhui Gu, Yafei Li, Jinlan Wang, Yi Chen, Masaru Kitsuregawa
- AAAI, 2024

Patents:

Prediction method of docking posture between protein and ligand based on graphic neural network

- Yanhui Gu, Xiaojian Chen, Xianfeng Zhang, Yuansu Hao, Yuxin Wen, **Chuyue Liao**.
- CN116343910A, 2023.

AWARDS

Competitions

International Mathematical Contest in Modeling, Outstanding Winner (*Top 1*)	Feb. 2024
Interdisciplinary Contest In Modeling, Honorable Mention	May. 2023
"Challenge Cup" National College Student Curricular Academic Science and Technology Works Competition (*Leader and Core Participant*), Jiangsu Division, Second Prize	Aug. 2023
C4-Network Technology Challenge, East China Division, Second Prize	Aug. 2023
Mathematics Competition of Chinese College Student, Jiangsu Division, Third Prize	Oct. 2022

Honors&Scholarships

AAAI-24 Student Scholarship(*$1000*)	Dec. 2023
AAAI Student Membership	Dec. 2023-Present
First Prize Scholarship of NNU	Dec. 2022

TECHNICAL SKILLS

Programming Languages Machine Learning	Python, C/C++, Java
Toolkits	PyTorch
Other frequently-used tools	Git, LaTeX, Vim

HOBBIES

Novel Writing, Book Review, Film Review, Badminton, Hiking