Yi Jiang

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Education

Undergraduate, Shandong University 2019.09 – Present
Software Engineering *Jinan,27 Shanda Nanlu, China*
- Concentration: AI, Bioinformatics

Research Experience

Undergraduate Researcher 2020.04 – 2022.12
Research Center of Software and Data Engineering, SDU, Leyi Wei
- Prediction of peptide secondary structures is an intermediate step in predicting three-dimensional (3D) or tertiary structures; Using the deep learning method, the PHAT framework is proposed. In this framework, Hypergraph Multi-head Attention network and language model–ProtT5 are used to predict the peptide secondary structures only based on peptide sequences and obtain the state of the art.

Undergraduate Researcher 2023.01 – Present
Bioinformatics and Mathematical Biosciences Lab, OSU, Qin Ma
- Spatial transcriptomics approaches have substantially advanced our capacity to detect the spatial distribution of RNA transcripts in tissues; it is advanced to use hypergraph and heterogenous graph to integrate scRNA-seq and spatial transcriptomics data.

Research Publications

Accepted articles

- Explainable Deep Hypergraph Learning Modeling the Peptide Secondary Structure Prediction. Jiang Y, et al. Advanced Science, 2023
- DeepBIO is an automated and interpretable deep-learning platform for biological sequence prediction, functional annotation, and visualization analysis. R Wang, Jiang Y, et al. Nucleic acids research (Breakthrough Article), 2023
- AFP-MFL: accurate identification of antifungal peptides using multi-view feature learning. Fang Y, Xu F, Wei L, Jiang Y, et al. Briefings in Bioinformatics, 2023
- scIMC: a platform for benchmarking comparison and visualization analysis of scRNA-seq data imputation methods. Dai C, Jiang Y, et al. Nucleic acids research, 2022
- iDNA-ABF: multi-scale deep biological language learning model for the accurate and interpretable prediction of DNA methylations. Junru Jin, Yingying Yu, Ruheng Wang, Xin Zeng, Chao Pang, Jiang Y, et al. Genome Biology, 2022
- Accelerating bioactive peptide discovery via mutual information-based meta-learning. He W, Jiang Y, et al. Briefings in Bioinformatics, 2022

Projects

Second-hand market program based on Java Swing 2020.03 – 2020.05
Course Project
- A Second-hand market program; Trading and communicating based on socket connection and using Java Swing to design graphical user interface.
- Development tools: Java

iSDU applet based on Java system and React Framework 2020.06 – 2021.03
Widely used by SDU students

- A service platform that provides access to grades, class schedules, and school news and information; Personal information storage and information collection based on Springboot framework with MySQL and React with Javascript to design graphical clients.
- Development tools: Java(Springboot), Javascript(React.js), MySQL

A map applet showed in Shandong University Official Admissions Letter   2020.06 – 2020.07
Widely used by SDU first-year students for 2020 and 2021
- A service program to provide first-year students with maps of multiple campuses of Shandong University; Map image acquisition based on Springboot framework and Taro framework with React and Javascript to design graphical client.
- Development tools: Java(Springboot), Javascript(Taro.js), Python

DeepBIO: a deep-learning platform for biological sequence analysis   2021.12 – 2022.12
Retweeted by 138 tweets from 128 users, covering an upper bound of 300,000+ followers
- A first-of-its-kind automated and interpretable deep-learning platform for biological sequence functional analysis based on Springboot framework and Pytorch to run biological AI Model and React framework with Javascript to design web interface.
- Development tools: Java(Springboot), Javascript(React.js), Python(Pytorch)

Other Experience

- Minister of Research Department of Sharing-idea, School of Software, Shandong University
- Minister of Shandong University Student Online Technology Department
- Minister of AI Department of Microsoft Club of Shandong University

Awards & Honors

The 15th National University Student Software Innovation Competition Winning prize
Alliance of Model Software Institutes, China   *2022*

The 14th National University Student Software Innovation Competition Winning prize
Alliance of Model Software Institutes, China   *2021*

Ranked 37th in the second track of 2021 global AI innovation competition
Alibaba Cloud   *2021*

Specialized Skills

Programming Languages: Python, Java, C++, Javascript, HTML, CSS, etc.
Modeling on Machine Learning and Deep Learning: Pytorch
Design framework figure: Power Point and Adobe Illustrator