Pengfei Zhang

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For Summer 2024 Internship (starting Jun 2024)

EDUCATION

Year	Degree	Institute	GPA
Fall 2022 -	PHD student in Computer Science	University of California, Irvine (UCI)	4.0/4.0
2017 - 2021	B.Eng in Computer Science	University of Science and Technology of China (USTC)	3.45/4.3

TECHNICAL SKILLS

- Languages. Python, Pytorch, C++, Java, R, Web Frontend Languages, Verilog.
- Frameworks. Flask, Django, Vue (Ant Design), Spring Boot, MySQL.
- Tools. Docker, Axios, Git, Langchain.

PUBLICATIONS

RESEARCH INTERESTS: Computer Vision, Artificial Intelligence, Large Language Model, AI for Healthcare

- **Conferences**

2. **Pengfei Zhang**, Deying Kong. **Handformer2T: A Lightweight Regression-based model for Interacting Hands Pose Estimation from a single RGB Image** *WACV 2024 (Accepted)*
   - Designed a lightweight but high performance model which proposed hand-level tokenization in the transformer based model for interacting hand pose estimation, where only one token was used for each hand.
   - Designed a pose query enhancer module, which can refine the pose prediction iteratively utilizing feature sampling and Residual Log-likelihood Loss.
   - Implemented the architecture using pytorch, analyzed and visualized the experiments, and wrote the manuscript.
1. **Pengfei Zhang**, Zhengyuan Jiang, Yixuan Wang, Yu Li#. **CLMB: deep contrastive learning for robust metagenomic binning.** *RECOMB 2022 (oral)*
   - Designed a contrastive learning framework for training Variational Autoencoder (VAE) in metagenome binning (CLMB), which improved the metagenomic binning results.
   - Conducted performance experiments and ablation studies. Analyzed the data using Pandas and visualized the experiment results using matplotlib.

- **Journals**

1. Dongjing Miao#, **Pengfei Zhang**, Jianzhong Li, Ye Wang, Zhipeng Cai#. **Approximation and Inapproximability Results on Computing Optimal Repairs.** *VLDB Journal 2022*
   - Implemented the database repair algrithm using C++ and GLPK for linear programming.
   - Modified the Inapproximability theory for database subset repair problem.

SOFTWARE AND PROGRAMMING PROJECTS

- **aMedLLM - an Automatic Conversational Health Agent** *Oct. 2023 - Present*
  - Implemented a Conversational Health Agent framework leveraging LLMs-based agents (ReAct) as problem solvers, which can address health tasks like stress estimation. Built the frontend using Vue and backend using flask and Docker.
- **MiniCourse** *Mar. 2020 - Sep. 2021*
  - Co-led a group of 9 to implement the architecture and API design for a course selection management platform.
  - Developed the frontend using Vue and the backend using Django, and writing the documentation for the platform.

Working Experience

- Research Intern (The Chinese of Hong Kong) in AI and Bioinformatics *May. 2022 - Aug. 2022*
  - Led the project on AI for metagenomic binning and presented the results on (Conference 1)

AWARDS

- Dean's award from UCI *2022-2023*
- National Encouragement Scholarship (top 20%) from USTC *2020*
- National Encouragement Scholarship (top 20%) from USTC *2018*