

Pengfei Zhang

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Applying for Summer 2024 Internship (starting Jun 2024) with F1 OPT

EDUCATION

Year	Degree	Institute	GPA
Fall 2022 -	PHD student in Computer Science	University of California, Irvine	4.0/4.0
2017 - 2021	B.Eng in Computer Science	University of Science and Technology of China	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.
- Research Fields: Computer Vision (Pose estimation), Generative models, Large Language Model, AI for Healthcare

PUBLICATIONS

• 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. This decreased the model size by 11M parameters and three times increased the FPS.
 - Designed a pose query enhancer module, which can refine the pose prediction iteratively utilizing feature sampling and Residual Log-likelihood Loss, which improved the MPJPE by 5.5mm
 - 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 reconstructed 8-22 more high-quality genomes and 15-32 more middle-quality genomes more than the second-best result.
 - 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 algorithm 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 in the Chinese University of Hong Kong *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*