Pengfei Zhang   Applying for Summer 2025 Internship (starting June 2025) with F1 OPT
Email : **pengfz5@uci.edu**   Github   LinkedIn   Personal Website

EDUCATION

Year	Degree	Institute	GPA
Fall 2022 -	PHD student in Computer Science	University of California, Irvine	3.93/4.0
2017 - 2021	B.Eng in Computer Science	University of Science and Technology of China	3.45/4.3

TECHNICAL SKILLS

- Languages. Python, C++, Java, Web Frontend Languages (Vue Framework), Verilog.
- Frameworks. Pytorch, Kafka, Spring Boot, Vue (Ant Design), Langchain, Flask, MySQL, Redis.
- Research Fields: Text/Audio-driven Motion Synthesis, Generation, Editing, and Rendering; Large Vision Models (LVMs); Retrieval Augmented Generation; Diffusion models; Pose Estimation

PUBLICATIONS

- **Selected Publications**

  5. **KinMo: Kinematic-aware Human Motion Understanding and Generation**   *Submitted to ICCV 2025*
     - Proposed a novel motion representation that decomposes motion into distinct body joint-group movements and interactions from a kinematic perspective.
     - Designed an automatic LVM-based dataset collection pipeline that enhances the existing text-motion benchmark by incorporating fine-grained local joint-group movements and interaction descriptions.
     - Introduced a hierarchical motion semantics approach that progressively fuses joint-group level movements and interaction information into the global action-level semantics for modality alignment.
     - With the hierarchy, introduced a coarse-to-fine motion synthesis procedure for various motion generation and editing downstream applications (Demo Video).

  4. **Contextual Gesture: Co-Speech Gesture Video Generation through Context-aware Gesture Representation** *Submitted to ICML 2025*
     - we introduce Contextual Gesture, a framework that improves co-speech gesture video generation through three innovative components: (1) a chronological speech-gesture alignment that temporally connects two modalities, (2) a contextualized gesture tokenization that incorporate speech context into motion pattern representation through distillation, and (3) a structure-aware refinement module that employs edge connection to link gesture keypoints to improve video generation.

  3. **DEMENTIA-PLAN: An Agent-Based Framework for Multi-Knowledge Graph Retrieval-Augmented Generation in Dementia Care.**   *AAAI W*

  2. **Handformer2T: A Lightweight Regression-based model for Interacting Hands Pose Estimation from a single RGB Image**   *WACV 2024*
     - 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.

  1. **CLMB: deep contrastive learning for robust metagenomic binning.**   *RECOMB 2022 (oral)*

SOFTWARE AND PROGRAMMING PROJECTS

- **Distributed Chatroom with LLaMa-Powered Summarization**   *Jan. 2024 - Mar. 2024*
  - Implemented A Multi-topic Web Chatroom which can provide backup on previous conversations and LLaMa Powered summarizations after each refresh
  - Developed the frontend using React, the backend using Spring Boot (Java) and Kafka, and the database using Redis.
  - Implemented Cache Feature on each summarization, which largely decreases latency and improves fault tolerance
- **OpenCHA - an Automatic Conversational Health Agent**   *Oct. 2023 - Present* (Collaborative Lab Projects)
  - 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.

Working Experience

- Research Science Intern at Flawless. AI. Inc in Los Angeles   *Jun. 2024 - Sep. 2024*
  - Research on Human Text/Audio-driven Motion Understanding, Generation, Editing, and Rendering (Conf. 4, 5)
- Research Intern in the Chinese University of Hong Kong in Hong Kong   *May. 2022 - Aug. 2022*

AWARDS

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