Pengfei Zhang Applying for Summer 2025 Internship (starting June 2025) with F1 OPT
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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, and Editing; Large Vision Models (LVMs); Retrieval Augmented Generation; Diffusion models; Pose Estimation

PUBLICATIONS

- **Selected Publications**
  3. **KinMo: Kinematic-aware Human Motion Understanding and Generation** *Submitted to CVPR 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).
  2. **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.
  1. **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. This decreased the model size by 11M parameters and three times increased the FPS.

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*
  - Lead the project on Human Text/Audio-driven Motion Understanding, Generation, and Editing (Conference 2, 3)
- Research Intern in the Chinese University of Hong Kong in Hong Kong *May. 2022 - Aug. 2022*
  - Lead the project on AI for metagenomic binning

AWARDS

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