Xuan Ju

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EDUCATION

The Chinese University of Hong Kong Hong Kong, China

Ph.D. in Computer Science and Engineering Aug 2022 - Aug 2026

- Ph.D. candidate at CURE Lab, supervised by Prof. Qiang XU.

Tongji University Shanghai, China

B.S. in Computer Science (Minor Degree in Mathematics and Applied Mathematics) Sep 2018 - Jul 2022

- GPA: **4.85/5.0**, Ranking: **Top 1%** (including non-experimental-area students)
- Studied in **Mathematical Intensive Training Class** (Innovation Experimental Area)

HONORS & AWARDS

- *Scholarship:* **National Scholarships**, 2/156 (Oct 2021)
- *Scholarship:* **National Scholarships**, 1/156 (Dec 2020)
- *Scholarship:* **QiDi Scholarship**, 1/156 (May 2022)
- *Competition:* **First Prize** in “Challenge Cup” National College Students Contest of Extracurricular Academic and Scientific Work (March 2022)
- *Honor:* **Shanghai outstanding graduates** (April 2022)
- *Competition:* **Silver Award** in "Challenge Cup" Shanghai College Students Entrepreneurship Plan Competition (March 2023)
- *Competition*: **First Prize** in National College Student Computer Design Competition (July 2022)
- *Honor:* Outstanding Student of Tongji University (Jan 2021)
- *Scholarship:* Guo Xie Birong Scholarship (Dec 2019)

PROJECT & INTERNSHIP

Intership in IDEA (International Digital Economy Academy) Jun 2022 - Present

Research Institute

- *Research:* We propose a new Human Image Generation framework **HumanSD** with a novel heatmap-guided denoising loss, to natively generate human images with highly precise pose control.
- Research: We introduce **Human-Art** dataset to bridge human related tasks in natural and artificial scenarios. Rich set of baseline results and detailed analyses for related tasks is provided.

Internship in CURE Lab Dec 2021 - Jul 2022

Work in CURE Lab under the supervision of Qiang Xu

- *Research:* We propose a simple baseline framework for videobased 2D/3D human pose estimation that can achieve 10× efficiency improvement over existing works without any performance degradation, named **DeciWatch**.
- *Research:* We propose a novel plug-and-play refinement network, namely **SmoothNet**, which can be attached to any existing pose estimators to improve its temporal smoothness and enhance its per-frame precision simultaneously.

Internship in SenseTime Dec 2021 - May 2022

Research Institute

- *Open Source Code Base Construction:* Participate in the construction of MMHuman3D
- *Research:* Work on the topic of efficient and smooth human pose estimation

Fault Detection of High-speed Railway Pantograph Based on Digital Image Analysis Apr 2019 - Nov 2020

Project Leader

- *Honor:* Successfully concluded as a **National College Student Innovation and Entrepreneurship Training Program** in Jun 2020
- *Honor:* Awarded Tongji University Dream Fund in Nov 2019 (**Top 5 projects**)

PUBLICATIONS

- HumanSD: A Native Skeleton-Guided Diffusion Model for Human Image Generation. [Paper, **First** author]
- Human-Art: A Versatile Human-Centric Dataset Bridging Natural and Artificial Scenes. [Paper, **First** author, CVPR2023]
- DeciWatch: A Simple Baseline for 10x Efficient 2D and 3D Pose Estimation. [Paper, Second author, **ECCV2022**]
- Smoothnet: a plug-and-play network for refining human poses in videos. [Paper, Third author, **ECCV2022**]

MISCELLANEOUS

- **Skills:** Python, LaTeX, C/C++, MATLAB, Verilog HDL, HTML, JavaScript, CSS, Git, MySQL
- **Research Interests:** Artificial Intelligence, Computer Vision, Image Generation, Motion Understanding