

Chenyi Kuang

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EDUCATION

University of Science and Technology of China

Bachelor in Electrical Engineering

Hefei, China

Sep. 2015 – June 2019

Rensselaer Polytechnic Institute

PhD in Electrical Engineering

Troy, NY, USA

Sep. 2019 – Dec 2024

TECHNICAL SKILLS

Languages: Python, Matlab **Developer Tools:** PyCharm, Jupyter Notebook, Spider

Libraries: Pytorch, Pytorch3D, gspat, trimesh, open3D, Hugging Face Transformers, Tensorflow, Matplotlib, Scikit-learn, etc. Experienced in 3D mesh processing and 3D gaussian-splatting tools, including geometric representation, feature extraction, and integration of 3D data into deep learning frameworks.

PROFESSIONAL EXPERIENCE

Skyhive Network, LLC

Algorithm Engineer

Newark, DE

Feb 2026 – Present

- Developing light-weight deep learning models into a production environment for user behavior prediction, including face recognition and user attention analysis.
- Developing a novel system that incorporates spatial & temporal pilot interaction data and pilot activity analysis into a recommendation algorithm on a aviation platform.

Honda Research Institute USA

Computer Vision Research Intern

San Jose, CA

May 2024 – Aug 2024

- Developed a unified system for joint human attention, action and intent analysis, including saliency detection, gaze anticipation, human-object interaction recognition and anticipation, with an emphasis on assistive scenarios.
- Constructed a new benchmark for comprehensive human activity analysis, including labels for human & object trajectories, action and gaze. Created multiple baseline models on the new benchmark from published models.

Research Collaborator

Jan 2025 – Present

- Collaborating on gaze-conditioned human-object-interaction recognition and anticipation research. Developed the first uncertainty-aware model for joint gaze & action detection and anticipation. Contributing to ongoing publications and experimental benchmarking.
- Patent submission: “Gaze-aware human activity detection & anticipation”.

IBM Almaden Lab

Computer Vision Research Intern

San Jose, CA

May 2022 – Aug 2022

- Developed new algorithm for uncertainty-guided data-free knowledge distillation in model fusion. The algorithm is further applied to computer vision tasks such as image classification and object detection.

Rensselaer Polytechnic Institute

Research Assistant

Troy, NY

Sep 2019 – May 2022

- Developed geometry-aware facial expression recognition models leveraging 3D Morphable Models
- Developed a physics-driven 4D facial reconstruction framework integrating biomechanical constraints for dynamic facial tracking and expression analysis in video sequences.
- Constructed an anatomically-informed deformable 3D eye model incorporating eyeball and corneal geometry for accurate 3D gaze estimation; validated on real-world data under varying head poses and illumination conditions.
- Built a multi-person gaze tracking system for modeling group interaction dynamics and human attention patterns.

Teaching Assistant

Sep 2022 – May 2024

- Supported instruction for Circuits and Robotics courses; mentored students in Ubuntu-based development environments and guided implementation of object detection and classification algorithms for robotic systems.

SELECTED PUBLICATIONS

- [1] Kuang, Chenyi, Zijun Cui, Jeffrey O. Kephart, and Qiang Ji. “Au-aware 3d face reconstruction through personalized au-specific blendshape learning.” (ECCV 2022)
- [2] Kuang, Chenyi, Jeffrey O. Kephart, and Qiang Ji. “Interaction-aware dynamic 3d gaze estimation in videos.” (NeurIPS 2024 GMMML workshop, oral)
- [3] Kuang, Chenyi, Jeffrey O. Kephart, and Qiang Ji. “Au-aware dynamic 3d face reconstruction from videos with transformer.” (WACV 2024)
- [4] Kuang, Chenyi et al. “Towards an accurate 3d deformable eye model for gaze estimation.” (ICPR 2022)
- [5] Kuang, Chenyi, Jeffrey O. Kephart, Qiang Ji. “Physics-informed Dynamic 3D Face Reconstruction.” (FG 2026 oral)