Kefan Chen

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EDUCATION

Brown University, Ph.D. student in Computer Science 2022 – 2027
- Research focus: 3D Computer Vision, Generative AI

University of Toronto, Bachelor in Electrical Engineering 2014 – 2018

SKILLS

Python, C++, C, Pytorch, Tensorflow, Computer Vision, Deep Learning, Research

INDUSTRY EXPERIENCE

Meta, Research Scientist Intern Jun 2023 – Dec 2023
- Research 3D diffusion model and neural fields for hand generative modeling.
- Direct a research project and submit a first-author paper to CVPR 2024.

Pinterest, Machine Learning Engineer Jan 2022 – Sep 2022
- Develop ML models to extract various attributes of interest from the shopping websites for recommendation and other downstream applications.

Gatik AI, Software Engineer Sep 2020 – Dec 2021
- Research and develop long-range multimodal perception and sensor fusion for autonomous delivery.
- Coordinate and manage long-term research collaboration with universities and academic labs.

Google Research, AI Resident Jun 2018 – Aug 2020
- Conduct research on 3D computer vision and geometric representation learning for computer vision.
- Published a first-authored paper at CVPR and co-authored paper at NeurIPS.
- Developed a novel algorithm for camera pose estimation that achieves state-of-the-art performance.
- Designed various models and implemented large-scale distributed training in Tensorflow.

NVIDIA, Research Intern May 2017 – Aug 2017
- Conduct research on deep learning in animation and pose estimation for robotics using domain transfer.
- Designed and built a robotic perception model with only synthetic data to play board games and demonstrated the demo at ACM SIGGRAPH 2017. (Video link)

PUBLICATION

[1] **K Chen**, C Min, L Zhang, S Hampali, C Keskin, S Sridhar, "HandDiff: Generative Neural Hand Diffusion for Gesture Transfer, Novel View Synthesis, and Single-View reconstruction," *under review of CVPR24*, 2023.

[2] C Pokhariya, I Shah, A Xing, Z Li, **K Chen**, A Sharma, S Sridhar, "MANUS: Markerless Grasp Capture using Articulated 3D Gaussians," *under review of CVPR24*, 2023.

[3] C Lu, P Zhou, A Xing, C Pokhariya, A Dey, I Shah, R Mavidipalli, D Hu, A Comport, **K Chen**, S Sridhar, "DiVa-360: The Dynamic Visual Dataset for Immersive Neural Fields," *under review of CVPR24*, 2023.

[4] **Kefan Chen**, Noah Snavely, Ameesh Makadia, "Wide-Baseline Relative Camera Pose Estimation with Directional Learning," *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021.

[5] Jake Levinson, Carlos Esteves, **Kefan Chen**, Noah Snavely, Angjoo Kanazawa, Afshin Rostamizadeh, Ameesh Makadia, "An Analysis of SVD for Deep Rotation Estimation," *Conference on Neural Information Processing Systems (NeurIPS)*, 2020.

ACADEMIC EXPERIENCE

Brown Interactive 3D Vision & Learning Lab, PhD Researcher Sep 2022 – Current
- Research on 3D computer vision and generative AI, diffusion model, and neural field.

UofT Machine Learning Group, Research Assistant Feb 2017 – May 2018
- Researched on Motion Generation using Adversarial Training supervised by Prof. Sanja Fidler.
- Researched on Homography Estimation for Sports Analytics, supervised by Prof. Raquel Urtasun.