Kefan (Arthur) Chen

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EDUCATION

Brown University, Ph.D. student in Computer Science 2022 – 2027
- Research focus: 3D Computer Vision, Deep Learning, Robotics

University of Toronto, Bachelor in Electrical Engineering 2014 – 2018

SKILLS

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

INDUSTRIAL EXPERIENCE

Pinterest, Machine Learning Engineer, Toronto Jan 2022 – Sep 2022
- Develop machine learning models to extract various attributes of interest from the shopping websites.

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

Google Research, Researcher, New York City 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, Toronto 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] **Kefan Chen**, Noah Snavely, Ameesh Makadia, "Wide-Baseline Relative Camera Pose Estimation with Directional Learning," *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021.

[2] 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 learning 3D representation of human hand and objects as well as hand-object interaction through multi-view images and videos.

UofT Machine Learning Group, Research Assistant Feb 2017 – May 2018
- Researched on Motion Generation using Adversarial Training supervised by Prof. Sanja Fidler.
  - Proposed using Gated Graph Sequence Neural Network (GGS-NN) with a soft attention mechanism to learn the spatial-temporal representation for motion capture data.
- Researched on Homography Estimation for Sports Analytics, supervised by Prof. Raquel Urtasun.
  - Designed and implemented a convolutional neural network to localize the hockey rink and estimate the homography between the template and the rink in the frames from broadcast videos.

AWARDS & SCHOLARSHIPS

- Dean's Honor List, Department of Electrical and Computer Engineering 2014 – 2017
- Summer Research Studentship, Department of Electrical and Computer Engineering May 2016
- University Entrance Scholarship, University of Toronto Sep 2014