Kefan (Arthur) Chen

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Education

- **Brown University** *2022 - 2026*
  Ph.D. in Computer Science Providence, RI
  - Advisor: Srinath Sridhar
  - Research expertise: Generative AI, Foundation Model, 3D Vision, Digital Human, Multimodal Learning.
  - Graduate Coursework: Measure-theoretic Probability, Statistical Learning Theory, Computational Linguistics, Deep Learning, Computer Vision.

- **University of Toronto** *2014 - 2018*
  Bachelor in Electrical Engineering Toronto, Canada

Experience

- **Waymo (Google Robotaxi)** *Jun 2025 - Aug 2025*
  Research Intern Mountain View, CA
  - Develop a flow matching model in BEV space to infer spatial features of missing camera or LiDAR.

- **Meta AI** *Jun 2024 - Mar 2025*
  Researcher (contract) Burlingame, CA
  - Research photorealistic 3D avatar modeling using Gaussian Splatting for digital humans and VR/XR.
  - Develop the first model to capture dynamic hand-face interaction using a mesh-rigged Gaussian representation, achieving state-of-the-art realism in human avatars.
  - Publish first-author and co-author papers at top AI conferences, including ICCV and CVPR.

- **Meta Reality Labs** *Jun 2023 - Dec 2023*
  Research Scientist Intern Redwood, WA
  - Research 2D/3D diffusion and generative foundation models for image, video, and 3D synthesis.
  - Develop the first large generative foundation model using diffusion transformer for hand image, video, and novel view synthesis, achieving state-of-the-art generalization and zero-shot abilities.
  - Publish a first-author paper at CVPR and receive recognition as Highlight presentation (top 2.98%).

- **Pinterest** *Jan 2022 - Sep 2022*
  Machine Learning Engineer (full-time) Toronto, Canada
  - Implement and deploy ML models to scale metadata extraction for shopping content data mining.

- **Gatik** *Sep 2020 - Dec 2021*
  Founding Softwarer Engineer (full-time) Toronto, Canada
  - Lead development of long-range perception and multimodal sensor fusion for autonomous trucking.

- **Google Research** *Jun 2018 - Aug 2020*
  AI Resident (full-time) New York, NY
  - Research 3D computer vision, camera pose estimation, and SO(3) representation learning.
  - Develop a spherical probability distribution regression model in Tensorflow for wide-baseline camera pose estimation, achieving 50% error reduction compared with prior methods.
  - Publish first-author and co-author papers at top AI conferences, including CVPR and NeurIPS.

- **NVIDIA** *May 2017 - Aug 2017*
  Deep Learning Intern Toronto, Canada
  - Develop a domain randomization model to bridge the domain gap between simulation and the real world, improving cross-domain detection accuracy from 65% to 93%.
  - Demonstrated the state-of-the-art game robot demo at Industry Expo of ACM SIGGRAPH 2017. (News)

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

[C.1] **Kefan Chen**, Sergiu Oprea, Justin Theiss, Sreyas Mohan, Srinath Sridhar, Aayush Prakash. **InteractAvatar: Modeling Hand-Face Interaction in Photorealistic Avatars with Deformable Gaussians**. In *Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**)*, 2025.

[C.2] **Kefan Chen**, Chaerin Min, Linguang Zhang, Shreyas Hampali, Cem Keskin, Srinath Sridhar. **FoundHand: Large-Scale Domain-Specific Learning for Controllable Hand Image Generation**. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2025. (**Highlight, top 2.98% of submissions.**)

[C.3] Aashish Rai, Dilin Wang, Mihir Jain, Nikolaos Sarafianos, **Kefan Chen**, Srinath Sridhar, Aayush Prakash. **UVGS: Reimagining Unstructured 3D Gaussian Splatting using UV Mapping**. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2025.

[C.4] Chandradeep Pokhariya, Ishaan N Shah, Angela Xing, Zekun Li, **Kefan Chen**, Avinash Sharma, Srinath Sridhar. **MANUS: Markerless Grasp Capture using Articulated 3D Gaussians**. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2024.

[C.5] Cheng-You Lu, Peisen Zhou, Angela Xing, Chandradeep Pokhariya, Arnab Dey, Ishaan Shah, Rugved Mavidipalli, Dylan Hu, Andrew Comport, **Kefan Chen**, Srinath Sridhar. **DiVa-360: The Dynamic Visual Dataset for Immersive Neural Fields**. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2024. (**Highlight, top 2.81% of submissions.**)

[C.6] **Kefan Chen**, Noah Snavely, Ameesh Makadia. **Wide-Baseline Relative Camera Pose Estimation with Directional Learning**. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2021.

[C.7] Jake Levinson, Carlos Esteves, **Kefan Chen**, Noah Snavely, Angjoo Kanazawa, Afshin Rostamizadeh, Ameesh Makadia. **An Analysis of SVD for Deep Rotation Estimation**. In *Advances in Neural Information Processing Systems (**NeurIPS**)*, 2020.

[J.1] C Wang, F Fan, R Sabatini, O Voznyy, K Bicanic, X Li, D Sellan, M Saravanapavanantham, N Hossain, **K Chen**, S Hoogland, E Sargent. **Quantum Dot Color-Converting Solids Operating Efficiently in the kW/cm2 Regime**. *Chemistry of Materials*, Vol. 29, Issue 12, pp. 5104-5112, 2017.

SKILLS

- **Programming Languages:** Python, C++, C, Pytorch, Tensorflow, JAX.
- **Research:** Diffusion, Transformer, Gaussian Splattting, multimodal learning, vision foundation model, human avatar, pose estimation, 3D reconstruction.

ACADEMIC SERVICES

- Outstanding Reviewer award at CVPR2025.
- Serve as reviewer for top AI/ML conferences, including NeurIPS, ICML, ICLR, CVPR, ICCV, ECCV, IROS.
- Mentor junior undergrad and master students to conduct novel research and publish papers at top AI conference as co-corresponding author.