Luyang Zhu

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Employment

World Labs	**San Francisco, CA**
Member of Technical Staff	*2024–present*

- Manager: Fei-Fei Li
- Projects: Foundation models for spatial intelligence [Technical blog]

Google	**Seattle, WA**
Student Researcher	*2022–2024*

- Manager: Ira Kemelmacher-Shlizerman
- Projects: Generative AI for virtual try-on [Paper1; Paper2; Product1; Product2; Product3]

Adobe	**Seattle, WA**
Research Intern	*2021 Summer*

- Manager: Ruben Villegas
- Project: Learning physics-based human motion priors using VAE

NVIDIA	**Seattle, WA**
Research Intern	*2020 Summer*

- Manager: Dieter Fox
- Project: Neural implicit representation for depth completion of transparent objects [Paper]

Education

University of Washington	**Seattle, WA**
Ph.D. in Computer Science and Engineering	*2018–2024*

- Advisors: Ira Kemelmacher-Shlizerman, Steve Seitz, Brian Curless

Peking University	**Beijing, China**
B.S. in Computer Science (summa cum laude)	*2014–2018*

- Advisor: Yizhou Wang

Highlighted Projects

Foundation Models for Spatial Intelligence	**World Labs**

- Creator of one foundation model featured in World Labs' technical blog.
- Creator of a robust, flexible, and fast library for large-scale distributed training.
- Co-leader of pre-training and post-training modeling efforts.
- Core contributor of in-house libraries: neural network components, efficient dataloaders, distributed data pipelines, and inference.

Generative AI for Virtual Try-on (VTO)	**Google**

- Creator of *the first* **production-ready** diffusion model for VTO
  - Created the VTO system: data curation, model architecture, training algorithm, and large-scale training.
  - Paper: TryOnDiffusion, first-author, published in CVPR 2023.
  - Product launch: VTO for shopping on Google search.
- Creator of *the first* VTO system for mixing and matching multiple garments
  - Improved the VTO system: identity preservation, precise warp for pixel-level garment details, and text-guided layout control.
  - Paper: M&M VTO, first-author, published in CVPR 2024.
  - Product launch: VTO dress; VTO yourself (presented on **Google I/O 2025**).

Publications

Johanna Karras, Yingwei Li, Nan Liu, **Luyang Zhu**, Innfarn Yoo, Andreas Lugmayr, Chris Lee, Ira Kemelmacher-Shlizerman. "Fashion-VDM: Video Diffusion Model for Virtual Try-On." *SIGGRAPH Asia*, 2024.

Luyang Zhu, Yingwei Li, Nan Liu, Hao Peng, Dawei Yang, Ira Kemelmacher-Shlizerman. "M&M VTO: Multi-Garment Virtual Try-On and Editing." *CVPR*, 2024. Highlight

Luyang Zhu, Dawei Yang, Tyler Zhu, Fitsum Reda, William Chan, Chitwan Saharia, Mohammad Norouzi, Ira Kemelmacher-Shlizerman. "TryOnDiffusion: A Tale of Two UNets." *CVPR*, 2023.

Luyang Zhu, Arsalan Mousavian, Yu Xiang, Hammad Mazhar, Jozef van Eenbergen, Shoubhik Debnath, Dieter Fox. "RGB-D Local Implicit Function for Depth Completion of Transparent Objects." *CVPR*, 2021.

Luyang Zhu, Konstantinos Rematas, Brian Curless, Steve Seitz, and Ira Kemelmacher-Shlizerman. "Reconstructing NBA players." *ECCV*, 2020. Spotlight

Georgios Pavlakos, **Luyang Zhu**, Xiaowei Zhou, Kostas Daniilidis. "Learning to Estimate 3D Human Pose and Shape from a Single Color Image." *CVPR*, 2018.

Awards & Honors

2018–2022: Reality Lab Fellowship, University of Washington

2018: Outstanding Graduate Award, Peking University

2017: Finalist (0.4%, 11/3663), MCM/ICM Interdisciplinary Contest in Modeling®

2015–2017: Kwang-Hua Scholarship (Top 10%), Peking University

2016–2017: Award for Outstanding Research Performance, Peking University

2015: Award for Outstanding Academic Performance, Peking University

Academic Service

Reviewer: CVPR, ECCV, ICCV, SIGGRAPH, SIGRAPH ASIA   *2022–present*

Teaching Experience

CSE 490G1: Introduction to Deep Learning   **University of Washington**
Teaching Assistant   *Autumn 2022*

CSE 481V: VR Capstone   **University of Washington**
Teaching Assistant   *Spring 2021*

Technical Skills

Programming: Python, C++, CUDA, SQL

ML Frameworks: PyTorch, JAX, Triton, CUTLASS

Data Frameworks: Apache Beam, Google Flume/Dataflow, Ray, LanceDB, BigQuery