Jae Yong Lee

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Keywords: Machine Learning, 3D Reconstruction & Rendering, Full-Stack Web Development

INTRODUCTION

Hello! My name is Jae Yong Lee (Jae) and I am a Computer Vision Engineer at Meta.

Prior to joining Meta, I was a Machine Learning Engineer at Apple, working on Persona. Prior to Apple, I received my PhD from UIUC under Professor Derek Hoiem, specializing in computer vision. Throughout and prior to my PhD, I've also worked as a computer vision engineer and as a full-stack software engineer at Reconstruct Inc.

I am well-versed in researching novel ideas for computer vision / machine learning algorithms and turning ideas into scalable productions. I have in-depth experience in designing and experimenting with new CV/ML algorithms, optimizing complex ML algorithm runtimes by writing custom first/second order gradient functions in CUDA, developing load-balanced backend system, presenting processed data with interactive frontend interfaces, all the way up to rendering visualizable assets using OpenGL. i.e., from idea to pixels ;)

Feel free to reach out if you're interested in my work

EDUCATION

University of Illinois at Urbana-Champaign — Urbana-Champaign, IL
Ph.D. in Computer Science (Advisor: Derek Hoiem) — 2018 – 2023
B.S. in Computer Engineering — 2010 – 2016

PROFESSIONAL RESEARCH EXPERIENCE

Meta Reality Labs — Redmond, WA
Research Intern under Zhaoyang Lv — Summer 2022

Amazon Go — Seattle, WA
Research Intern under Chuhang Zou — Summer 2021

Microsoft Corporation — Redmond, WA
Research Intern under Joseph Degol — Summer 2019, Summer 2020

WORK EXPERIENCE

Meta Platforms Inc. — Burlingame, CA
Computer Vision Engineer — 2024-Present

Apple Inc. — Sunnyvale, CA
Machine Learning Engineer — 2024

Reconstruct Inc. — Urbana-Champaign, IL
Computer Vision Engineer (Part Time) — 2018-2023
Part time developer / Student Intern — 2015-2016

Freelance Developer — Seoul, South Korea
Contract 3D Computer Vision Engineer — 2016-2018

Republic of Korea Air Force — Osan, South Korea
Staff Sergeant — 2011 –2013

PUBLICATIONS

Jae Yong Lee, Yuqun Wu, Chuhang Zou, Derek Hoiem, Shenlong Wang. Plenoptic PNG: Real-Time Neural Radiance Fields in 150 KB. 3DV, 2025

Yuqun Wu*, **Jae Yong Lee***, Chuhang Zou, Shenlong Wang, Derek Hoiem. MonoPatchNeRF: Improving Neural Radiance Fields with Patch-based Monocular Guidance. 3DV, 2025

Michal Shlapentokh-Rothman, Ansel Blume, Yao Xiao, Yuqun Wu, Sethuraman T V, Heyi Tao, **Jae Yong Lee**, Wilfredo Torres, Yu-Xiong Wang, Derek Hoiem. Region-Based Representations Revisited. CVPR, 2024

Jae Yong Lee, Chuhang Zou, Derek Hoiem. Deep PatchMatch MVS with Learned Patch Coplanarity, Geometric Consistency and Adaptive Pixel Sampling. Arxiv, 2022

Jae Yong Lee, Yuqun Wu, Chuhang Zou, Shenlong Wang, and Derek Hoiem. QFF: Quantized Fourier Features for Neural Field Representations. Arxiv, 2022

Yuqun Wu*, **Jae Yong Lee***, Derek Hoiem. Sparse SPN: Depth Completion from Sparse Keypoints. Arxiv, 2022

Liwen Wu, **Jae Yong Lee**, Anand Bhattad, Yuxiong Wang, David A. Forsyth. DIVeR: Real-time and Accurate Neural Radiance Fields with Deterministic Integration for Volume Rendering. In CVPR, 2022
(Oral Presentation, Best Paper Finalist)

Jae Yong Lee, Joseph DeGol, Chuhang Zou and Derek Hoiem. PatchMatch-RL: Deep MVS with Pixelwise Depth, Normal, and Visibility. In ICCV 2021
(Oral Presentation)

Jae Yong Lee, Joseph DeGol, Victor Fragoso and Sudipta. N. Sinha. PatchMatch-Based Neighborhood Consensus for Semantic Correspondence. In: CVPR. 2021

Jacob J. Lin, **Jae Yong Lee** and Mani Golparvar-Fard. Exploring the potential of image-based 3d geometry and appearance reasoning for automated construction progress monitoring. In Computing in Civil Engineering 2019: Data, Sensing, and Analytics, 162-170

Joseph DeGol, **Jae Yong Lee**, Rajbir Kataria, Daniel Yuan, Timothy Bretl and Derek Hoiem. FEATS: Synthetic Feature Tracks for Structure from Motion Evaluation. In 3DV, 2018

TEACHING

Computational Photography (CS 445) Urbana-Champaign, IL
Teaching Assistant Fall 2019

AWARDS

Best Paper Finalist Urbana-Champaign, IL
Our paper was selected as the Best Paper Finalist in CVPR 2022 2022

Best Vocal Presentation Award Urbana-Champaign, IL
As Mentee in Promoting Undergraduate Research, University of Illinois December 2014