

RAWAL KHIRODKAR

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RESEARCH INTERESTS

Fields: Computer Vision, Machine Learning, Robotics
Topics: Digital Humans, Multimodal Reasoning, Generative AI

EDUCATION

Carnegie Mellon University Ph.D. in Robotics	Aug 2019 - Sep 2023 Advisor: Prof. Kris Kitani
Carnegie Mellon University M.S. in Robotics	Aug 2017 - July 2019 Advisor: Prof. Kris Kitani
Indian Institute of Technology, Bombay Bachelors in Computer Science	Aug 2013 - July 2017 Advisor: Prof. Ramakrishnan

PROFESSIONAL EXPERIENCE

Meta Reality Labs Research Scientist	July 2024 - Present Pittsburgh, PA
Meta Reality Labs Postdoctoral Research Scientist	Sep 2023 - July 2024 Pittsburgh, PA
Meta Reality Labs Research Intern	May 2022 - Aug 2022 Redmond, WA
Amazon Lab126 Research Intern	May 2021 - Aug 2021 Sunnyvale, CA
Amazon Lab126 Research Intern	May 2020 - Aug 2020 Sunnyvale, CA
Trexquant Finance Quantitative Analyst	May 2017 - Aug 2017 Stamford, CT (remote)
Samsung Research Intern	May 2016 - Aug 2016 Bangalore, India
Autodesk Software Engineering Intern	May 2015 - Aug 2015 Pune, India

AWARDS & HONORS

- | | |
|---|---------|
| • Best Paper Candidate, ECCV 2024, <i>top 10 papers</i> | 2024 |
| • Distinguished Paper Award, CVPR 2023, Egovis Workshop, | 2023 |
| • Amazon Graduate Fellowship, | 2020 |
| • Government of India Graduate Fellowship, <i>top 25 students</i> | 2020-22 |

- **Best Teaching Assistant Honorable Mention**, IIT Bombay, 2017
- **Indian National Physics Olympiad**, *top 50 students* 2013
- **Indian National Maths Olympiad**, *top 50 students* 2013
- **NTSE Scholar**, Awarded to top 800 amongst 0.5 million students, 2009-13

PUBLICATIONS

- [1] **ATLAS: Decoupling Skeletal and Shape Parameters for Expressive Parametric Human Modeling**
Jinhyung Park, Javier Romero, Shunsuke Saito, Fabian Prada, Takaaki Shiratori, Yichen Xu, Federica Bogo, Shoou-I Yu, Kris Kitani, **Rawal Khirodkar**
International Conference on Computer Vision (ICCV), 2025
- [2] **Pippo : High-Resolution Multi-View Humans from a Single Image**
Yash Kant, Ethan Weber, Jin Kyu Kim, **Rawal Khirodkar**, Su Zhaoen, Julieta Martinez, Igor Gilitschen-ski, Shunsuke Saito, Timur Bagautdinov
Conference on Computer Vision and Pattern Recognition (CVPR), 2024 (*Highlight*)
- [3] **Harmony4D: A Video Dataset for In-The-Wild Close Human Interactions**
Rawal Khirodkar, Jyun-Ting Song, Jinkun Cao, Zhengyi Luo, Kris Kitani
Neural Information Processing Systems, NeurIPS (Datasets and Benchmark Track), 2024
- [4] **Uravatar: Universal relightable gaussian codec avatars**
Junxuan Li, Chen Cao, Gabriel Schwartz, **Rawal Khirodkar**, Christian Richardt, Tomas Simon, Yaser Sheikh, Shunsuke Saito
Special Interest Group on Computer Graphics and Interactive Techniques, SIGGRAPH Asia, 2024
- [5] **Sapiens: Foundation for Human Vision Models**
Rawal Khirodkar, Timur Bagautdinov, Julieta Martinez, Su Zhaoen, Austin James, Peter Selednik, Stuart Anderson, Shunsuke Saito
International Conference on Computer Vision (ICCV), 2024 (*Best Paper Candidate*)
- [6] **Ego-Exo4d: Understanding skilled human activity from first-and third-person perspectives**
Ego4D Consortium
Conference on Computer Vision and Pattern Recognition (CVPR), 2024 (*Oral Presentation*)
- [7] **Real-Time Simulated Avatar from Head-Mounted Sensors**
Zhengyi Luo, Jinkun Cao, **Rawal Khirodkar**, Alexander Winkler, Kris Kitani, Weipeng Xu
Conference on Computer Vision and Pattern Recognition (CVPR), 2024 (*Highlight*)
- [8] **Dual-Modal 3D Human Pose Estimation using Insole Foot Pressure Sensors**
Erwin Wu, Yichen Peng, **Rawal Khirodkar**, Hideo Koike, Kris Kitani
International Symposium on Mixed and Augmented Reality Adjunct (ISMAR), 2024
- [9] **Soleposer: Full body pose estimation using a single pair of insole sensor**
Erwin Wu, **Rawal Khirodkar**, Hideki Koike, Kris Kitani
ACM Symposium on User Interface Software and Technology, 2024
- [10] **Generalizable Neural Human Renderer**
Mana Masuda, Jinhyung Park, Shun Iwase, **Rawal Khirodkar**, Kris Kitani
Meeting on Image Recognition and Understanding (MIRU), 2024 (*Oral Presentation*)

- [11] [Multi-person 3d pose estimation from multi-view uncalibrated depth cameras](#)
Yu-Jhe Li, Yan Xu, **Rawal Khirodkar**, Jinhyung Park, Kris Kitani
arxiv, 2024
- [12] [EgoHumans: An Egocentric 3D Multi-Human Benchmark](#)
Rawal Khirodkar, Aayush Bansal, Lingni Ma, Richard Newcombe, Minh Vo, Kris Kitani
International Conference on Computer Vision (ICCV), 2023 (*Oral Presentation*)
- [13] [Observation-Centric SORT: Rethinking SORT for Robust Multi-Object Tracking](#)
Jinkun Cao, Xinshuo Weng, **Rawal Khirodkar**, Jiangmiao Pang, Kris Kitani
Conference on Computer Vision and Pattern Recognition (CVPR), 2023
- [14] [Sequential Ensembling for Semantic Segmentation](#)
Rawal Khirodkar, Brandon Smith, Siddhartha Chandra, Amit Agrawal, Antonio C.
arxiv, 2022
- [15] [Occluded Human Mesh Recovery](#)
Rawal Khirodkar, Shashank Tripathi, Kris Kitani
Conference on Computer Vision and Pattern Recognition (CVPR), 2022
- [16] [Multi-Instance Pose Networks: Rethinking Top-Down Pose Estimation](#)
Rawal Khirodkar, Visesh Chari, Amit Agrawal, Ambrish Tyagi
International Conference on Computer Vision (ICCV), 2021
- [17] [RePOSE: Fast 6D Object Pose Refinement via Deep Texture Rendering](#)
Shun Iwase, Xingyu Liu, **Rawal Khirodkar**, Rio Yokota, Kris Kitani
International Conference on Computer Vision (ICCV), 2021
- [18] [Adversarial Domain Randomization](#)
Rawal Khirodkar, Kris Kitani
arxiv, 2019
- [19] [Domain Randomization for Scene Specific Object Detection & Pose Estimation](#)
Rawal Khirodkar, Donghyun Yoo, Kris Kitani
Winter Conference on Applications of Computer Vision (WACV), 2019

PATENTS

- [1] [Multi-Person 3D Pose Estimation](#)
Jinhyung Park, Yu-Jhe Li, **Rawal Khirodkar**, Kris Kitani, Shawn Hunt
US Patent App. 18504429, 2025

INVITED TALKS

- | | |
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| • Best Practices to building Foundation Models, <i>Facebook AI Research</i> | 2024 |
| • Sapiens: Foundation for Human Vision Models, <i>Meta Reality Labs</i> | 2024 |
| • Building 3D Datasets from Scratch, <i>Project Aria Workshop, CVPR</i> | 2023 |
| • Egocentric Human Understanding, <i>Massachusetts Institute of Technology, Graphics Seminar</i> | 2023 |
| • In-the-Wild Human Pose Estimation, <i>National University of Singapore, Vision Seminar</i> | 2023 |
| • Using Synthetic Data for Long-Tail Problems, <i>Carnegie Mellon University</i> | 2022 |

SELECTED MEDIA COVERAGE

SAPIENS

LearnOpenCV, Hacker News, MarkTechPost, TeqnoVerse, Unite AI, Sentsight News

EGO-EXO4D

AI-Daily, University of Bristol, BTW-Media, Georgia-Tech

PROFESSIONAL SERVICE

ORGANIZER

- Co-organizer, 3D Human Workshop, *Second Edition*, CVPR 2025
- Co-organizer, 3D Human Workshop, *First Edition*, CVPR 2024

CONFERENCE REVIEWER

NeurIPS, ICML, ICLR, CVPR, ICCV, ECCV, WACV, AAAI, SIGGRAPH Asia

JOURNAL REVIEWER

JMLR, IJCV, TPAMI

ADMISSIONS COMMITTEE

Carnegie Mellon University: Masters in Computer Vision (*twice*), Masters in Robotics, Ph.D. in Robotics

RESEARCH MENTORING

- David Park (CMU RI PhD), 2023–2024
- Jyun-Ting Song (CMU MSR, now PhD at CMU RI), 2023–2024
- Jinkun Cao (CMU RI PhD, now at Meta), 2022–2023
- Shun Iwase (CMU MSR, now PhD at CMU RI), 2020–2021
- Shengcao Cao (CMU MSR, now PhD at UIUC), 2019–2020
- Rishi Madhok (CMU MSCV, now at Microsoft), 2018–2019

TEACHING

TEACHING ASSISTANCE

- Computer Vision (16-720), CMU, *Instructor: Srinivasa & Kris* Fall 2021 & 2020, Spring 2018
- Statistical Techniques in Robotics (16-831), CMU, *Instructor: Kris Kitani* Spring 2019
- Math Fundamentals (16-811), CMU, *Instructor: Michael Erdmann* Fall 2019
- Machine Learning (10-601), CMU, *Instructor: Matt Gormley* Fall 2018
- Intro. to Computer Science (CS-101), IITB, *Instructor: Sharat Chandran* Spring 2017

GUEST LECTURES

- Computer Vision (16-720), CMU, *Backpropagation and Optimizers* Fall 2022