

Lea Müller

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Bio and Research Interests

I am a postdoctoral researcher at UC Berkeley working on human body pose and shape reconstruction and human behavior understanding under the mentorship of **Angjoo Kanazawa** and **Jitendra Malik**. During my Ph.D. at MPI-IS Tübingen in the Perceiving Systems department lead by **Michael Black**, my research focused on 3D human pose and body shape estimation from images. I specialized in understanding and reconstructing contact humans make with themselves and with other people. During a six-months research visit at KAIR, UC Berkeley, I had the chance studying broader concepts in computer vision and apply them to 3D human mesh reconstruction in social interaction scenarios. Prior to that, I graduated from the University of Jena in Computational and Data Science. Advised by **Joachim Denzler**, we collaborated with the department of general psychology and cognitive neuroscience to investigate the mutual influence of people in dialogues from video data. In the future, I would like to further link 3D vision and psychology to better understand human behavior.

Education

UC Berkeley, Berkeley, CA, USA

Postdoctoral Researcher, 2024 - *present*

Advisors: Angjoo Kanazawa, Jitendra Malik

Max Planck Institute for Intelligent Systems, Tübingen, Germany

Ph.D., 2019 - 2024

Advisor: Michael Black

Friedrich Schiller University, Jena, Germany

M.Sc., Computational and Data Science, 2016 - 2018

Advisor: Joachim Denzler

Ruprecht Karls University, Heidelberg, Germany

B.Sc., Mathematics, application subject: Psychology, 2011 - 2015

Advisor: Rainer Dahlhaus

Industry and Research Employment

Berkeley AI Research, Berkeley, USA

Visiting researcher with Angjoo Kanazawa, 06/2022 – 12/2022

Computer Vision Group, Jena, Germany

Research assistant, 10/2017 – 02/2018

SAP, Walldorf, Germany

Working student in Big Data Products, 05/2016 – 08/2016

Robert Bosch Tool Corporation, Mount Prospect, USA

Internship in Supply Chain Management, 04/2015 – 02/2016

Robert Bosch GmbH, Leinfelden, Germany

Internship in Product Management, 09/2014 – 03/2015

Translational Psychiatric Therapy Research, Heidelberg, Germany

Research assistant, 12/2012 – 09/2014

Awards and Scholarships

MPI-IS Outstanding Female Doctoral Student Prize Honorable Mention, 2023

Best Paper Candidate, IEEE/CVF Conf. on Computer Vision and Pattern Recognition (CVPR), 2022, for the paper “Accurate 3d body shape regression using metric and semantic attributes” by V. Choutas*, L. Müller*, C.-H. Huang, S. Tang, D. Tzionas, and M. J. Black.

*equal contribution

Best Pitch and Best Business Model Award, Cyber Valley Start-up Incubation Program, 2022

Best Paper Candidate, IEEE/CVF Conf. on Computer Vision and Pattern Recognition (CVPR), 2021, for the paper “On Self-Contact and Human Pose” by L. Müller, A. A. A. Osman, S. Tang, C.-H. P. Huang, and M. J. Black.

Exam Award of the Dean, Friedrich Schiller University Jena, Faculty of Mathematics and Computer Science, 2019

IT scholarship, Bertlesmann, 2018 - 2019

Activities

Workshop organization for the S4 Soft Skill Workshop Series of IMPRS-IS, 2021 - 2022

Student representative at the International Max Planck Research School for Intelligent Systems, 10/2019 - 02/2021

Student mentor at Make Your School – Your Ideas Workshop, 2019

Hack4Health hackathon for predicting influenza outbreaks for the Robert Koch Institute, second place, 2018

Students for kids competition conducted by the Assmann Stiftung for prevention, finalist, 2016

Talks

Self- and Interpersonal Contact in 3D Human Mesh Reconstruction, 46th Pattern Recognition and Computer Vision Colloquium, Prague University, 2023

Accurate 3d body shape regression using metric and semantic attributes, oral presentation at CVPR 2022

On Self-Contact and Human Pose, ETH Zürich, Computer Vision and Learning Group lead by Prof. Dr. Siyu Tang, 2021.

On Self-Contact and Human Pose, oral presentation at CVPR 2021

Causal inference in nonverbal dyadic communication, Friedrich Schiller University Jena, at the Graduation Ceremony of the Faculty of Mathematics and Computer Science, 2019.

Reviewer Activity

ICCV, CVPR

Patent Applications

L. Müller, M. Black, C.-H. P. Huang, D. Tzionas, V. Choutas, “Accurate body shape estimation”, provision application filed, April 17, 2023

Publications

- [1] L. Müller, V. Ye, G. Pavlakos, M. J. Black, and A. Kanazawa, “Generative proxemics: A prior for 3d social interaction from images,” in *Computer Vision and Pattern Recognition (CVPR)*, 2024.
- [2] S. Tripathi, L. Müller, C.-H. P. Huang, T. Omid, M. J. Black, and D. Tzionas, “3D human pose estimation via intuitive physics,” in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2023.
- [3] V. Choutas*, L. Müller*, C.-H. P. Huang, S. Tang, D. Tzionas, and M. J. Black, “Accurate 3d body shape regression using metric and semantic attributes,” in *Computer Vision and Pattern Recognition (CVPR)*, 2022, pp. 2718–2728.
- [4] M. Kocabas, C.-H. P. Huang, J. Tesch, L. Müller, O. Hilliges, and M. J. Black, “SPEC: Seeing people in the wild with an estimated camera,” in *International Conference on Computer Vision (ICCV)*, 2021, pp. 11 035–11 045.
- [5] L. Müller, A. A. A. Osman, S. Tang, C.-H. P. Huang, and M. J. Black, “On self-contact and human pose,” in *Computer Vision and Pattern Recognition (CVPR)*, 2021, pp. 9990–9999.
- [6] M. Shadaydeh, L. Müller, D. Schneider, M. Thümmel, T. Kessler, and J. Denzler, “Analyzing the direction of emotional influence in nonverbal dyadic communication: A facial-expression study,” *IEEE Access*, vol. 9, pp. 73 780–73 790, 2021.
- [7] L. Müller., M. Shadaydeh., M. Thümmel., T. Kessler., D. Schneider., and J. Denzler., “Causal inference in nonverbal dyadic communication with relevant interval selection and granger causality,” in *International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISAPP)*, 2019, pp. 490–497.