Franziska Mueller

Dr.-Ing.

Google Inc. Brandschenkestrasse 152 8002 Zurich Switzerland



⊠ franziskamu@google.com ™ franziska-mueller.github.io

I'm a Research Scientist at Google Zurich, working in the area of Computer Vision and Augmented Reality.

Profile

Name	Franziska Mueller
Gender	female
Date of birth	September 7, 1993
Place of birth	Völklingen, Germany
Citizenship	German
Languages	German (native), English (fluent), French (good command), Spanish (basic)
	Education
04/2016 12/2020	May Disust Institute for Information and Seculard University Containing Containing
04/2010 - 12/2020	PhD (DrIng.) in Computer Science (summa cum laude) in the Graphics, Vision and Video group under supervision of Prof. Dr. Christian Theobalt
	PhD Thesis: "Real-Time 3D Hand Reconstruction in Challenging Scenes From a Single Color or Depth Camera"
03/2015 - 12/2020	Saarbrücken Graduate School of Computer Science, Saarbrücken, Germany.
	Member of the Graduate School of Computer Science
06/2018 - 09/2018	Research Visit at Stanford University, Stanford, CA, USA.
	Host: Prof. Dr. Leonidas Guibas, Geometric Computation group
03/2015 - 03/2016	Saarland University, Saarbrücken, Germany.
	Master of Science (M.Sc.) Honors Degree in Computer Science, grade A(1.0) (best) Master's Thesis: "Real-time Hand-Object Tracking Using a Single Depth Camera"
10/2012 - 02/2015	Saarland University, Saarbrücken, Germany.
	Bachelor of Science (B.Sc.) in Computer Science, minor Computational Linguistics, grade $A(1.0)$ (best)
	Bachelor's Thesis: "Real-time Hand Tracking Using Hybrid Pose Optimization"
08/2004 - 07/2012	Warndtgymnasium, Völklingen, Germany.
	Graduation: Abitur (German high school diploma), grade: 1.0 (best)
	Positions
10/2020 - present	Google, Zurich, Switzerland.
	Research Scientist
07/2019 - 11/2019	Facebook Reality Labs, Pittsburgh, USA. Research Intern with Yaser Sheikh
06/2015 - 10/2015	Max Planck Institute for Informatics, Saarbrücken, Germany.
, , ,	Student Research Assistant with Prof. Dr. Theobalt

Teaching

Teaching Assistant	Max Planck Institute for Informatics, Saarbrücken, Germany.
	Seminars:
	 Computer Vision and Machine Learning for Computer Graphics (Summer 2019, Summer 2020) 3D Shape Analysis (Summer 2018)
	• Computer Vision for Computer Graphics (Summer 2016, Summer 2017)
Student Teaching	Saarland University, Saarbrücken, Germany.
Assistant	Courses:
	• Math Preparation Course for New CS Students (Summer 2015, Summer 2016, Summer 2017) • Theoretical Computer Science, Prof. Bläser (Winter 2014/15)
	• System Architecture, Prof. Reineke (Summer 2014)
	 Programming 1, Prof. Smolka (Winter 2013/14)
Student Lecturer	Saarland University, Saarbrücken, Germany.
	Courses: Math Branavation Course for New CS Students (Summer 2015)
	 Re-exam Preparation Programming 1 (March 2013)
	Awards & Honors
10/2021	Dr. Eduard Martin Award.
	Awarded from Saarland University to the best PhD graduates.
11/2018	Best Academic Paper Award.
	ACM International Conference on Interactive Surfaces and Spaces 2018, Tokyo, Japan.
10/2017	Best Poster Award.
	HANDS Workshop, ICCV 2017, Venice, Italy.
04/2017	Google PhD Fellowship.
	Awarded to 33 PhD students from North America, Europe, and the Middle East.
02/2017	Frauen-MINT-Award.
10/0010	Women STEM Award for the best Master Thesis in the category Industry 4.0.
12/2016	Award from the Erich-FBlase Foundation for Research and Science.
11/2016	Cüptor Hotz Model
11/2010	Guiller-Holz-Medal. Award for the best Master graduates in CS at Saarland University
05/2015	Bachelor Award
03/2013	Award for the best Bachelor graduates in CS at Saarland University.
03/2015 - 03/2016	Graduate School Scholarship.
	Scholarship from the Saarbrücken Graduate School of Computer Science.
10/2013 - 03/2016	Studienstiftung des Deutschen Volkes.
	Scholarship from the German Academic Scholarship Foundation.
04/2013 - 02/2015	Member of the Bachelor Honors Program.
	eq:special support program for talented and ambitious Bachelor students in CS at Saarland University.
10/2012 - 09/2013	Deutschlandstipendium.
	Scholarship from the federal state of Saarland and participating companies.
06/2012	Völklinger Abiturpreis.
	Award for the best high school diploma in the city of Völklingen.
	Technical Skills
Programming	C++, C, CUDA, Python, Matlab, Java, Standard ML, Haskell.
Deep Learning	TensorFlow, Keras, Caffe
Others	OpenGL, CMake, LATEX, Coq, Isabelle/HOL.

Academic Services

Reviewing Conferences.

- SIGGRAPH [2022, 2021]
- SIGGRAPH Asia [2020]
- ICCV [2021, 2019]
- CVPR [2021, 2020, 2019]
- ECCV Workshops [2018] (HANDS, PeopleCap, 3D Reconstruction in the Wild)
- 3DV [2019, 2018, 2017]
- Pacific Graphics [2019]
- FG [2018, 2017]

Reviewing Journals.

- Transactions on Pattern Analysis and Machine Intelligence [2020]
- Transactions on Visualization and Computer Graphics [2019]
- International Journal of Computer Vision [2019]
- Image and Vision Computing Journal [2018]

Invited Talks

- 03/2020 **Real-Time Pose and Shape Reconstruction of Two Interacting Hands**. Google (virtual)
- 11/2019 **Towards Lightweight Real-time Hand Reconstruction in Challenging Scenes**. Carnegie Mellon University, Pittsburgh, USA.
- 09/2018 **Towards Real-time Hand Tracking from In-the-wild Video**. PeopleCap Workshop, ECCV 2018, Munich, Germany.
- 10/2017 **Real-time Hand Tracking Under Occlusion From an Egocentric RGB-D Sensor**. Workshop Image-based Modeling of Articulated and Deformable Objects, ICCV 2017, Venice, Italy.

Publications

- [1] Abhishake Kumar Bojja, Franziska Mueller, Sri Raghu Malireddi, Markus Oberweger, Vincent Lepetit, Christian Theobalt, Kwang Moo Yi, and Andrea Tagliasacchi. HandSeg: An Automatically Labeled Dataset for Hand Segmentation From Depth Images. In *Proceedings of the Conference on Computer and Robot Vision (CRV)*, pages 151–158. IEEE, 2019.
- [2] Sophie Jörg, Yuting Ye, Franziska Mueller, Michael Neff, and Victor Zordan. Virtual Hands in VR: Motion Capture, Synthesis, and Perception. In *SIGGRAPH Asia 2020 Courses*, pages 1–32. 2020.
- [3] Sophie Jörg, Yuting Ye, Michael Neff, **Franziska Mueller**, and Victor Zordan. Virtual Hands in VR: Motion Capture, Synthesis, and Perception. In *ACM SIGGRAPH 2020 Courses*, pages 1–145. 2020.
- [4] Dushyant Mehta, Oleksandr Sotnychenko, Franziska Mueller, Weipeng Xu, Srinath Sridhar, Gerard Pons-Moll, and Christian Theobalt. Single-Shot Multi-Person 3D Body Pose Estimation From Monocular RGB Input. In Proceedings of the International Conference on 3D Vision (3DV), pages 120–130. IEEE, 2018.
- [5] Dushyant Mehta, Oleksandr Sotnychenko, Franziska Mueller, Weipeng Xu, Mohamed Elgharib, Pascal Fua, Hans-Peter Seidel, Helge Rhodin, Gerard Pons-Moll, and Christian Theobalt. XNect: Real-time Multi-Person 3D Motion Capture with a Single RGB Camera. ACM Transactions on Graphics (TOG), 39(4), 2020.
- [6] Franziska Mueller, Dushyant Mehta, Oleksandr Sotnychenko, Srinath Sridhar, Dan Casas, and Christian Theobalt. Real-time Hand Tracking under Occlusion from an Egocentric RGB-D Sensor. In *Proceedings of the International Conference on Computer Vision (ICCV)*, pages 1163–1172. IEEE, 2017.
- [7] Franziska Mueller, Florian Bernard, Oleksandr Sotnychenko, Dushyant Mehta, Srinath Sridhar, Dan Casas, and Christian Theobalt. GANerated Hands for Real-Time 3D Hand Tracking from Monocular RGB. In Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR), pages 49–59. IEEE, 2018.
- [8] Franziska Mueller, Micah Davis, Florian Bernard, Oleksandr Sotnychenko, Mickeal Verschoor, Miguel A Otaduy, Dan Casas, and Christian Theobalt. Real-time Pose and Shape Reconstruction of Two Interacting Hands With a Single Depth Camera. *ACM Transactions on Graphics (TOG)*, 38(4):1–13, 2019.

- [9] Jalees Nehvi, Vladislav Golyanik, **Franziska Mueller**, Hans-Peter Seidel, Mohamed Elgharib, and Christian Theobalt. Differentiable Event Stream Simulator for Non-Rigid 3D Tracking. In *CVPR Workshop on Event-based Vision*, 2021.
- [10] Neng Qian, Jiayi Wang, Franziska Mueller, Florian Bernard, Vladislav Golyanik, and Christian Theobalt. Html: A parametric hand texture model for 3d hand reconstruction and personalization. In European Conference on Computer Vision, pages 54–71. Springer, 2020.
- [11] Viktor Rudnev, Vladislav Golyanik, Jiayi Wang, Hans-Peter Seidel, **Franziska Mueller**, Mohamed Elgharib, and Christian Theobalt. EventHands: Real-Time Neural 3D Hand Pose Estimation from an Event Stream. In *International Conference on Computer Vision (ICCV)*, 2021.
- [12] Mohamed Soliman, Franziska Mueller, Lena Hegemann, Joan Sol Roo, Christian Theobalt, and Jürgen Steimle. FingerInput: Capturing Expressive Single-Hand Thumb-to-Finger Microgestures. In Proceedings of the International Conference on Interactive Surfaces and Spaces (ISS), pages 177–187. ACM, 2018.
- [13] Srinath Sridhar, Franziska Mueller, Antti Oulasvirta, and Christian Theobalt. Fast and Robust Hand Tracking Using Detection-Guided Optimization. In *Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 3213–3221. IEEE, 2015.
- [14] Srinath Sridhar, Franziska Mueller, Michael Zollhoefer, Dan Casas, Antti Oulasvirta, and Christian Theobalt. Real-time Joint Tracking of a Hand Manipulating an Object from RGB-D Input. In Proceedings of the European Conference on Computer Vision (ECCV), pages 294–310. Springer, 2016.
- [15] Jiayi Wang, Franziska Mueller, Florian Bernard, Suzanne Sorli, Oleksandr Sotnychenko, Neng Qian, Miguel A. Otaduy, Dan Casas, and Christian Theobalt. RGB2Hands: Real-Time Tracking of 3D Hand Interactions from Monocular RGB Video. ACM Transactions on Graphics (TOG), 39(6), 12 2020.
- [16] Jiayi Wang, Franziska Mueller, Florian Bernard, and Christian Theobalt. Generative Model-Based Loss to the Rescue: A Method to Overcome Annotation Errors for Depth-Based Hand Pose Estimation. In Proceedings of the International Conference on Automatic Face and Gesture Recognition (FG), pages 93–100. IEEE, 2020.
- [17] Tarun Yenamandra, Florian Bernard, Jiayi Wang, Franziska Mueller, and Christian Theobalt. Convex Optimisation for Inverse Kinematics. In Proceedings of the International Conference on 3D Vision (3DV), pages 318–327. IEEE, 2019.