

PAUL STRELI

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EDUCATION

ETH Zürich , Zurich, Switzerland PhD student at the Department of Computer Science Research on Computational Interaction and Mixed Reality. Advisor: Christian Holz	<i>2020–Present</i>
Imperial College London , London, UK Master of Electrical and Electronic Engineering (EEE) Top of class (1/114) Research on Hand Pose Recognition. Advisors: Tae-Kyun Kim & Guillermo Garcia-Hernando	<i>2015–2019</i> GPA: 4.0
Albertus Magnus School , Vienna, Austria School representative Top of the class	<i>2007–2015</i> GPA: 4.0

PROFESSIONAL EXPERIENCE

Meta Reality Labs , Redmond, USA Research Scientist Intern, Machine Perception for Input and Interaction XR Input team with Mark Richardson, Fadi Botros, Shugao Ma & Robert Wang	<i>September 2023–January 2024</i>
TikTok & ByteDance , London, UK Research Intern at <i>ByteDance AI Lab</i> Music Intelligence team with Ed Newton-Rex & Yuxuan Wang	<i>December 2019–June 2020</i>
TTTech Auto AG , Vienna, Austria Software Engineering Intern for Automated Driving Systems	<i>April–September 2018</i>
ÖBB (Austrian Federal Railways) , Vienna, Austria Project Management Intern for Predictive Maintenance	<i>August–September 2017</i>
Schiebel , Vienna, Austria R&D Intern for Vertical Take-Off and Landing Unmanned Air Systems (UAS)	<i>July–August 2016</i>

AWARDS & HONORS

Honorable mention award ACM CHI for Continual Human-in-the-Loop Optimization	<i>2025</i>
Meta Research PhD Fellowship Winner	<i>2023</i>
Spark Award Top 20 nominee ETH Zürich for TapType	<i>2023</i>
Meta Research PhD Fellowship Finalist	<i>2022</i>
Best Paper Award ACM CHI for CapContact (top 1% of submissions)	<i>2021</i>
Best Demo Award IEEE VR for TapID (jury's choice)	<i>2021</i>
Siemens Memorial Book Prize Imperial Top EEE student of final class list	<i>2019</i>
Head of Department's Prize Imperial Top EEE student in third year	<i>2018</i>
First Place Entrepreneurship Online Competition Imperial Business School	<i>2018</i>
Silvanus P Thompson Prize Imperial Top EEE student second year	<i>2017</i>
Second Year Group Project Prize Imperial Best EEE group project	<i>2017</i>
Dennis Gabor Prize Imperial Top EEE student in first year	<i>2016</i>
Dean's list Imperial	<i>2016/17/18/19</i>

PUBLICATIONS

18. Yiming Zhao*, Taein Kwon*, **Paul Strelis***, Marc Pollefeys and Christian Holz. 2025. EgoPressure: A Dataset for Hand Pressure and Pose Estimation in Egocentric Vision. In *Proceedings of IEEE CVPR 2025*. *Equal contribution
17. Yi-Chi Liao, **Paul Strelis**, Zhipeng Li, Christoph Gebhardt and Christian Holz. 2025. Continual Human-in-the-Loop Optimization. In *Proceedings of ACM CHI 2025*. **Honorable mention award**.
16. Dominik Hollidt, **Paul Strelis**, Jiayi Jiang, Yasaman Haghighi, Changlin Qian, Xintong Liu, and Christian Holz. 2024. EgoSim: An Egocentric Multi-view Simulator and Real Dataset for Body-worn Cameras during Motion and Activity. In *Proceedings of NeurIPS (Datasets and Benchmarks) 2024*.
15. Bjoern Braun, Daniel McDuff, Tadas Baltrusaitis, **Paul Strelis**, Max Moebus, and Christian Holz. 2024. Symp-Cam: Remote Optical Measurement of Sympathetic Arousal. In *Proceedings of IEEE-EMBS BHI 2024*.
14. **Paul Strelis**, Mark Richardson, Fadi Botros, Shugao Ma, Robert Wang, and Christian Holz. 2024. TouchInsight: Uncertainty-aware Rapid Touch and Text Input for Mixed Reality from Egocentric Vision. In *Proceedings of ACM UIST 2024*.
13. Zhipeng Li, Christoph Gebhardt, Yves Inglin, Nicolas Steck, **Paul Strelis**, and Christian Holz. 2024. Situation-Adapt: Contextual UI Optimization in Mixed Reality with Situation Awareness via LLM Reasoning. In *Proceedings of ACM UIST 2024*.
12. Jiayi Jiang, **Paul Strelis**, Xuejing Luo, Christoph Gebhardt, and Christian Holz. 2024. MANIKIN: Biomechanically Accurate Neural Inverse Kinematics for Human Motion Estimation. In *Proceedings of ECCV 2024*.
11. Jiayi Jiang, **Paul Strelis**, Manuel Meier, and Christian Holz. 2024. EgoPoser: Robust Real-Time Egocentric Pose Estimation from Sparse and Intermittent Observations Everywhere. In *Proceedings of ECCV 2024*.
10. **Paul Strelis**, Jiayi Jiang, Juliete Rossie, and Christian Holz. 2023. Structured Light Speckle: Joint egocentric depth estimation and low-latency contact detection via remote vibrometry. In *Proceedings of ACM UIST 2023*.
9. Huajian Qiu, **Paul Strelis**, Tiffany Luong, Christoph Gebhardt, and Christian Holz. 2023. ViGather: Inclusive Virtual Conferencing with a Joint Experience Across Traditional Screen Devices and Mixed Reality Headsets. In *Proceedings of ACM MobileHCI 2023*.
8. Valentin Bieri*, **Paul Strelis***, Berken Utku Demirel, and Christian Holz. 2023. BeliefPPG: Uncertainty-aware Heart Rate Estimation from PPG signals via Belief Propagation. In *Proceedings of UAI 2023*. *Equal contribution
7. **Paul Strelis**, Rayan Armani, Yi Fei Cheng, and Christian Holz. 2023. HOOV: Hand Out-Of-View Tracking for Proprioceptive Interaction using Inertial Sensing. In *Proceedings of ACM CHI 2023*.
6. Yi Fei Cheng, Tiffany Luong, Andreas Fender, **Paul Strelis**, and Christian Holz. 2022. ComforTable User Interfaces: Surfaces Reduce Input Error, Time, and Exertion for Tabletop and Mid-air User Interfaces. In *Proceedings of IEEE ISMAR 2022*.
5. Jiayi Jiang, **Paul Strelis**, Huajian Qiu, Andreas Fender, Larissa Laich, Patrick Snape, and Christian Holz. 2022. AvatarPoser: Articulated Full-Body Pose Tracking from Sparse Motion Sensing. In *Proceedings of ECCV 2022*.
4. **Paul Strelis**, Jiayi Jiang, Andreas Fender, Manuel Meier, Hugo Romat, and Christian Holz. 2022. TapType: Ten-finger text entry on everyday surfaces via Bayesian inference. In *Proceedings of ACM CHI 2022*.
3. Karan Ahuja, **Paul Strelis**, and Christian Holz. 2021. TouchPose: Hand Pose Prediction, Depth Estimation, and Touch Classification from Capacitive Images. In *Proceedings of ACM UIST 2021*, pp. 997–1009.
2. **Paul Strelis** and Christian Holz. 2021. CapContact: Super-resolution Contact Areas from Capacitive Touchscreens. In *Proceedings of ACM CHI 2021*. Article 289, 1–14. **Best paper award**.
1. Manuel Meier, **Paul Strelis**, Andreas Fender, and Christian Holz. 2021. TapID: Rapid Touch Interaction in Virtual Reality using Wearable Sensing. In *Proceedings of IEEE VR 2021*, pp. 519–528.

DEMONSTRATIONS

5. **Paul Strelis**, Mark Richardson, Fadi Botros, Shugao Ma, Robert Wang, and Christian Holz. 2024. Demonstrating Uncertainty-aware Rapid Touch and Text Input for Virtual Reality from Egocentric Vision. *ACM UIST 2024*.

4. Jiaxi Jiang, **Paul Strel**, Huajian Qiu, Andreas Fender, Larissa Laich, Patrick Snape, and Christian Holz. 2022. Demonstrating AvatarPoser for Full-Body Pose Tracking from Sparse Motion Sensing. *ECCV 2022*.
3. **Paul Strel**, Jiaxi Jiang, Andreas Fender, Manuel Meier, Hugo Romat, and Christian Holz. 2022. Demonstrating TapType for mobile ten-finger text entry anywhere. In *Extended Abstracts of ACM CHI 2022*.
2. Manuel Meier, **Paul Strel**, Andreas Fender, and Christian Holz. 2021. Demonstrating TapID for Rapid Touch Interaction on Surfaces in Virtual Reality for Productivity Scenarios. In *Extended Abstracts of ACM CHI 2021*.
1. Manuel Meier, **Paul Strel**, Andreas Fender, and Christian Holz. 2021. Demonstrating the Use of Rapid Touch Interaction in Virtual Reality for Prolonged Interaction in Productivity Scenarios. In *Abstracts and Workshops of IEEE VR 2021*. **best demonstration award** (jury's choice).

ACADEMIC SERVICE

Program Committee (Associate Chair), ACM CHI — Interacting with Devices	2023/25
Session Chair , ACM UIST — AI as Copilot	2024
Session Chair , ACM CHI — UI Design & Development	2022
Student Volunteer , ACM CHI	2022
Subcommittee chair assistant , ACM CHI (Interacting with Devices)	2021–22
External reviewer	
ACM CHI	2021–24
ACM UIST	2021–24
IEEE CVPR	2024–25
IEEE ICCV	2023/25
IEEE VR	2022
IEEE ISMAR	2022
ACM IMWUT	2022–23
ACM ISS	2021–22
ACM MobileHCI	2021

TEACHING EXPERIENCE

Guest Lecturer , <i>Mixed Reality</i> , ETH Zürich	Fall 2024
Graduate Teaching Assistant , <i>Mobile Health and Activity Monitoring</i> , ETH Zürich	Spring 2022/23/25
Graduate Teaching Assistant , <i>Probabilistic Artificial Intelligence</i> , ETH Zürich	Fall 2021/22/24
Graduate Teaching Assistant , <i>Ubiquitous Computing</i> , ETH Zürich	Spring 2021
Teaching Assistant , <i>Introduction to Computer Architecture and Systems</i> , Imperial	Fall 2018

INVITED TALKS

Google , AR team, Host: David Kim	2022
Microsoft Research , Swiss Joint Research Centre Workshop — Computer Vision	2021

STUDENTS MENTORED

Stephan Büeler , Bachelor, <i>Computer Science</i> , ETH Zürich	2025
Andela Ilic , Master, <i>Electrical Engineering</i> , ETH Zürich	2024
Zhengxu Li , Master, <i>Data Science</i> , ETH Zürich	2024
Haoyu Cen , Master, <i>Robotics, Systems and Control</i> , ETH Zürich	2024
Yifei Han , Bachelor, <i>Computer Science</i> , ETH Zürich	2024
Xintong Liu , Master, <i>Robotics, Systems and Control</i> , ETH Zürich	2023

Yves Inglin , Bachelor, <i>Computer Science, ETH Zürich</i>	2023
Jaro Meyer , Bachelor, <i>Computer Science, ETH Zürich</i>	2023
Yiming Zhao , Master, <i>Electrical Engineering, ETH Zürich</i>	2023
Shubham Kumar , Master, <i>Computer Science, ETH Zürich</i>	2022
Seraina Saurenmann , Master, <i>Robotics, Systems and Control, ETH Zürich</i>	2022
Bowen Wang , Master, <i>Electrical Engineering, ETH Zürich</i>	2022
Stefano Kron , Master, <i>Biomedical Engineering, ETH Zürich</i>	2022
Fabio Bazzi , Master, <i>Robotics, Systems and Control, ETH Zürich</i>	2022
Alexander Eichhorn , Bachelor, <i>Computer Science, ETH Zürich</i>	2022
Simon Boehi , Bachelor, <i>Computer Science, ETH Zürich</i>	2022
Michael Thomas Schlegel , Bachelor, <i>Computer Science, ETH Zürich</i>	2022
Valentin Bieri , Bachelor, <i>Computer Science, ETH Zürich</i>	2022
Francois Pailleau , Master, <i>Robotics, Systems and Control, ETH Zürich</i>	2021
Huajian Qiu , Master, <i>Computational Science and Engineering, EPFL</i>	2021
Daniel Gstöhl , Master, <i>Computer Science, ETH Zürich</i>	2021
Boris Bernegger , Bachelor, <i>Computer Science, ETH Zürich</i>	2021
Jannik Gartmann , Bachelor, <i>Computer Science, ETH Zürich</i>	2021

SELECTED PRESS COVERAGE

MIXED Reality News Researchers demonstrate fast typing on any surfaces with Quest 3.	2024
UploadVR Meta & ETH Zurich Researchers Say They've Solved Turning Any Surface Into A Keyboard.	2024
Hackaday TapType: AI-Assisted Hand Motion Tracking Using Only Accelerometers.	2022
Computerworld Präzise Touchscreens dank KI.	2021
TechXplore Improving touch screens with AI.	2021
Techstory AI for Improving Touch Screens.	2021
newelectronics Precise touch screens thanks to AI.	2021
TechXplore Virtual reality at your fingertips.	2021
Hackaday Bone Vibration brings Typing into VR.	2021
Kronen Zeitung Handgelenk-Sensor macht jede Fläche zur Tastatur.	2021
Eletimes Virtual Reality (VR) at the Tip of Your Fingers.	2021
Blick Virtuelle Realität: Dank Handgelenk-Sensor jede denkbare Fläche als Tastatur benutzen.	2021
New Atlas VR wristband tracks finger-taps via vibrating wrist bones.	2021