OTMAR HILLIGES | CURRICULUM VITAE

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PERSONAL

Born in Munich, Germany on July 3, 1979. Nationality: German.

RESEARCH INTERESTS

My research focus lies at the intersection of computer vision, machine learning and human computer interaction (HCI). The goal is to endow complex artificial agents with the ability to perceive and interpret human activities and intent such that they can interact with humans in a natural and fluent manner.

Focus areas:

- Computer vision: human pose estimation, 3D motion modelling, face, gesture and eye-gaze estimation
- Machine learning: deep learning, modelling of timeseries data, generative models
- HCI: data-driven user-modelling, computational design of intelligent interactive systems

ACADEMIC POSITIONS

2018–present	**Associate Professor in Computer Science**, ETH Zurich Head of the Institute for Intelligent Interactive Systems and the AIT Lab
2013–2018	**Assistant Professor in Computer Science (Tenure Track)**, ETH Zurich
2012–2013	**Researcher**, Microsoft Research, Cambridge, UK. *Interactive 3D Technologies Group*
2010–2011	**Postdoc Researcher**, Microsoft Research, Cambridge, UK. *Sensors and Devices Group*

EDUCATION

2005–2009	**PhD in Computer Science, LMU Munich, Germany.** Grade: 1.0/1.0 – *"summa cum laude"*. Committee: A. Butz (Advisor), S. Izadi, A. Wilson, S. Carpendale
1999–2004	**MSc in Computer Science, TU Munich, Germany.** Grade: 1.0/1.0 – *"summa cum laude"*. Thesis Advisor: G. Klinker. Finalist "Werner von Siemens Excellence Award"
1998	**Abitur**. Erasmus-Grasser-Gymnasium, Munich, Germany.

GRANTS AND OTHER FUNDING

2020–2024	"Generative Human Modelling" Funding: *CHF 600K*. **Google Research Award**
2017–2021	"OPTINT: Optimization-based Design of Interactive Technologies" Funding: *€ 1.5M*. **ERC Starting Grant**
2020–2021	"Next Generation Motion Capture Platform" Funding: *CHF 450K*. **Swiss National Science Foundation (SNF) R'equip**
2017–2020	"Soft Flexible Haptic Displays for AR/VR and Wearable Computing" Funding: *CHF 300K*. **Hasler Foundation Research Grant**
2017–2019	"Human-Centric-Flight II: End-user Design of High-level Robotic Behavior" Funding: *CHF 180K*. **Microsoft Research Grant**
2015–2018	"Deformation and Motion Modeling using Modular, Sensor-based Input Devices" Funding share: *CHF 250K*. **Swiss National Science Foundation (SNF)**
2015–2018	"UFO: Semi-Autonomous Aerial Vehicles for Augmented Reality, Human-Computer Interaction and Remote Collaboration" Funding: *CHF 375K*. **Swiss National Science Foundation (SNF)**
2014–2017	"Human-centric flight: Micro Aerial Vehicles for Interaction and Videography" Funding share: *CHF 255K*. **Microsoft Research Grant**
2014–2016	"Gesture Recognition Algorithms Using High-Speed, Wide Field-of-View, Short Range Radar for Mobile and Wearable Computing" Funding: *CHF 220K*. **Google Inc. Sponsored Research Agreement**

AWARDS

- **Best paper honorable mention** - ACM SIGCHI '18
- **Best paper honorable mention** - ACM UIST '17
- **Best paper award** - 3DV '17
- **Best paper award** - IEEE IROS '14
- **Best paper award** - ACM SIGCHI '14
- **Honorable mention best technote** - ACM SIGCHI '12
- **Best demo award runner-up** - ACM UIST '12
- **Best paper award** - Pervasive '12
- **Best paper award** - ACM CSCW '10
- **Best paper award** - ACM UIST '08

RESEARCH GROUP

Current PhD students:

2021–present	**Yufeng Zhang**
2020–present	**Marcel Bühler**
2020–present	**Alex Fan**
2020–present	**Gengyan Li**
2019–present	**Sammy Christen**
2019–present	**Xu Chen**
2019–present	**Thomas Langerack**
2018–present	**Velko Vechev**
2017–present	**Adrian Spurr**
2017–present	**Manuel Kaufmann**
2015–present	**Emre Aksan**

Former PhD students:

2017–2020	**Seonwook Park**. *Now at Lunit*
2015–2020	**Stefan Stevšić**. *Now at Tinamu Labs*
2015–2020	**Christoph Gebhardt**. *Now at Tinamu Labs*
2015–2018	**Benjamin Hepp**. *Now at Google Research*
2014–2020	**Jie Song**. *Postdoc at ETH* Winner Swisscom ICT thesis award (CHF 10K)
2014–2019	**Tobias Nägeli**. *Now CEO at Tinamu Labs, an ETH spin-off* Winner Qualcomm Innovation Fellowship (CHF 10K)

Current postdoctoral researchers:

2021–2023	**Xi Wang**, PhD from TU Berlin. *ETH post-doctoral fellowship*
2020–present	**Jie Song**, PhD from ETH. *FIFA sponsored Research Agreement*
2019–present	**Xucong Zhang**, PhD from MPI Saarbrücken, Germany. (Now faculty at TU Delft)

Former postdoctoral researchers:

2018–2020	**Anna Feit**, PhD from Aalto University, Finland. (Now faculty in Saarbrücken)
2018–2020	**David Lindlbauer**, PhD from TU Berlin. *ETH post-doctoral fellowship*. (Now faculty at CMU)
2014–2016	**Fabrizio Pece**, PhD from UCL, London. *ETH post-doctoral fellowship*. (Now at VizRT)

PROFESSIONAL ACTIVITIES

Program committee member (Area chair):

- ACM SIGCHI **2013, '14, '15, '16, '17, '20**
- ACM UIST **2013, '14, '16, '19, '20**
- ACM NordiCHI **2016**
- ACM TEI **2009, 2014**
- ACM MUM **2013**
- ACM UbiComp **2013**

- IEEE ISMAR **2013**
- IEEE 3DV **2012, 2013**
- ACM ITS **2010**

Conference organization:

- General chair IEEE ISMAR **2018**
- Keynote chair ACM UIST **2013, 2014**
- Video co-chair ACM Ubicomp **2013**
- Demo co-chair ACM UIST **2010, 2011**
- SV co-chair ACM ITS **2010**

Service and membership:

I regularly review for all computer vision conferences including CVPR, ICCV, ECCV and 3DV and for many journals. I also regularly review for conferences and journals in HCI such as ACM CHI, UIST and in AR IEEE VR, Computer Graphics, and Robotics.

I furthermore serve as organizer of workshops and tutorials including the workshop series on Gaze estimation in the wild (ICCV '19, ECCV '20, CVPR '21) and the Artificial Intelligence for HCI workshop at CHI 2020. Furthermore, I co-organize the ACM computational summer school series where I teach ML-based techniques for user behavior understanding and user modeling.

Organized courses and tutorials:

- Organizer of workshop series on Gaze estimation in the wild (ICCV '19, ECCV '20, CVPR '21)
- Organizer of workshop AI4HCI at ACM SIGCHI 2020
- Organizer and instructor Computational Interaction course at ACM SIGCHI 2018
- Organizer and member of steering committee of the annual "Summer School on Computational Interaction"
- Organizer Dagstuhl seminar "Computational Interactivity" 2017

Invited talks, conference presentations and seminars:

I regularly give invited talks at many internationally renowned academic institutions. Inncluding (since 2013) NYU, NY, USA, University of Tokyo and Nara Institute of Technology, Japan, TU Graz, Austria, TU Munich, Germany, FH Hagenberg, Austria, Microsoft Research and Google Research, University of Toronto, Stanford University and others.

SERVICE

- Head of the Institute for Intelligent Interactive Systems
- Head of the Doctoral Committee D-INFK
- Member of organization committee Distinguished Speaker Colloquium Series D-INFK
- Member of the ETH Robotics System and Control admission committee
- Member of the ETH AI center doctoral school admission committee
- Member of the ETH ethics committee
- Member of the ETH Media technology center steering committee
- ETH didactic fellow

MEMBERSHIPS

I am a fellow of the European Lab for Learning and Intelligent Systems (ELLIS), a member of the ETH AI Center, the ETH-MPI center for learning systems (CLS).

I am also a member of the ACM's SIGGRAPH and SIGCHI chapters and of the Computer Vision Foundation.

TEACHING

ETH Zurich, Switzerland:

2018–present	**Machine Perception**, Spring semester, 8 ECTS, 150-200 students
2014–present	**Human Computer Interaction**, Fall semester, 6 ECTS, 50% teaching, 80-90 students
2013–2017	**User Interface Engineering**, Spring semester, 4 ECTS, 40-50 students
2015–2016	**Visual Computing**, Fall semester, 8 ECTS, 50% teaching, 80-90 students
2014–2016	**Parallel Programming**, Spring semester, 7 ECTS, 50% teaching, 300-350 students
2017–present	**Seminar**: Computational Interaction
2016	**Seminar**: ML for Interactive Systems and Advanced Programming Tools, with M. Vechev
2013–2015	**Seminar**: Distributed Systems Seminar (”Smart Environments”), with F. Mattern

Thesis supervision:

Since starting at ETH I have supervised ~40 Master Theses, ~30 Bachelor Theses and several Semester Theses and other for-credit projects.

STARTUPS

TinamuLabs founded Dec 2018, CEO Tobias Nägeli, former PhD student at the AIT Lab.

PUBLICATIONS

My group conducts research in two interwoven strands which can be summarized under the umbrella of *machine perception for intelligent interactive systems*. Where the former refers to fundamental research on algorithms and techniques to endow artificial agents with perceptual capabilities that match our own. This line of work is predominantly published in the computer vision and AI literature including CVPR, ICCV and ECCV. The second aspect refers to the design and study of intelligent interactive systems that leverage these building blocks. The main outlet for this kind of work are the conferences and journals on HCI, robotics and graphics such as ACM SIGCHI, UIST, Siggraph, and IROS, ICRA and RA-L. An up-to-date list of publications can be found at: ait.ethz.ch/publications.

Bibliometric indicators:

ORCID ID:	0000-0002-5068-3474
Google scholar profile:	citations?user=-epU9OsAAAAJ
DBLP ID:	82/2289
Total no. of peer-reviewed publications:	~100
H-index:	54 (Google Scholar, Jan 2021)
Citations:	>14000 (Google Scholar, Jan 2021)

Journal Articles

[J1] Christoph Gebhardt, Antti Oulasvirta, and **Otmar Hilliges**. Nov. 5, 2020. “Hierarchical Reinforcement Learning Explains Task Interleaving Behavior”. In: *Computational Brain & Behavior*. Link.

[J2] Amirsaman Ashtari, Stefan Stevšić, Tobias Nägeli, Jean-Charles Bazin, and **Otmar Hilliges**. Sept. 2020. “Capturing Subjective First-Person View Shots with Drones for Automated Cinematography”. In: *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*. Link.

[J3] Quan Wen, Derek Bradley, Thabo Beeler, Seonwook Park, **Otmar Hilliges**, Jun-Hai Yong, and Feng Xu. May 2020. “Accurate Real-time 3D Gaze Tracking Using a Lightweight Eyeball Calibration”. In: *Computer Graphics Forum*. Link.

[J4] Stefan Stevsic, Sammy Christen, and **Otmar Hilliges**. Apr. 2020. “Learning to Assemble: Estimating 6D Poses for Robotic Object-Object Manipulation”. In: *IEEE Robotics and Automation Letters*. Link.

[J5] Werner Alexander Isop, Christoph Gebhardt, Tobias Nägeli, Friedrich Fraundorfer, **Otmar Hilliges**, and Dieter Schmalstieg. Oct. 23, 2019. “High-Level Teleoperation System for Aerial Exploration of Indoor Environments”. In: *Frontiers in Robotics and AI*. Link.

[J6] Oliver Glauser, Shihao Wu, Daniele Panozzo, **Otmar Hilliges**, and Olga Sorkine-Hornung. July 2019. “Interactive Hand Pose Estimation using a Stretch-Sensing Soft Glove”. In: *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*. Link.

[J7] Oliver Glauser, Daniele Panozzo, **Otmar Hilliges**, and Olga Sorkine-Hornung. Apr. 2019. “Deformation Capture via Soft and Stretchable Sensor Arrays”. In: *ACM Transactions on Graphics (TOG)*. Link.

[J8] Tobias Nägeli, Samuel Oberholzer, Silvan Plüss, Javier Alonso-Mora, and **Otmar Hilliges**. Jan. 2019. “Real-time Environment-independent Multi-view Human Pose Estimation with Aerial Vehicles”. In: *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH ASIA)*. Link.

[J9] Yinghao Huang, Manuel Kaufmann, Emre Aksan, Michael J. Black, **Otmar Hilliges**, and Gerard Pons-Moll. Jan. 2019. "Deep Inertial Poser: Learning to Reconstruct Human Pose from Sparse Inertial Measurements in Real Time". In: *ACM Transactions on Graphics, (Proceedings SIGGRAPH Asia)*. Link.

[J10] Benjamin Hepp, Matthias Nießner, and **Otmar Hilliges**. Dec. 2018. "Plan3D: Viewpoint and Trajectory Optimization for Aerial Multi-View Stereo Reconstruction". In: *ACM Transactions on Graphics (TOG)*. Link.

[J11] Stefan Stevšić, Tobias Nägeli, Javier Alonso-Mora, and **Otmar Hilliges**. Oct. 2018. "Sample Efficient Learning of Path Following and Obstacle Avoidance Behavior for Quadrotors". In: *IEEE Robotics and Automation Letters*. Link.

[J12] Alexis E. Block and Katherine J. Kuchenbecker. Oct. 25, 2018. "Softness, Warmth, and Responsiveness Improve Robot Hugs". In: *International Journal of Social Robotics*. Link.

[J13] Christoph Gebhardt, Stefan Stevsic, and **Otmar Hilliges**. Aug. 2018. "Optimizing for Aesthetically Pleasing Quadrotor Camera Motion". In: *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*. Link.

[J14] Tobias Nägeli, Lukas Meier, Alexander Domahidi, Javier Alonso-Mora, and **Otmar Hilliges**. July 2017. "Real-time Planning for Automated Multi-View Drone Cinematography". In: *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*. Link.

[J15] Tobias Nägeli, Javier Alonso-Mora, Alexander Domahidi, Daniela Rus, and **Otmar Hilliges**. July 2017. "Real-time Motion Planning for Aerial Videography with Dynamic Obstacle Avoidance and Viewpoint Optimization". In: *IEEE Robotics and Automation Letters*. Link.

[J16] Oliver Glauser, Wan-Chun Ma, Daniele Panozzo, Alec Jacobson, **Otmar Hilliges**, and Olga Sorkine-Hornung. July 2016. "Rig Animation with a Tangible and Modular Input Device". In: *ACM Transactions on Graphics*. Link.

[J17] Vittorio Megaro, Bernhard Thomaszewski, Maurizio Nitti, **Otmar Hilliges**, Markus Gross, and Stelian Coros. Nov. 2015. "Interactive Design of 3D-printable Robotic Creatures". In: *ACM Transactions on Graphics. (Proceedings Siggraph Asia))*. Link.

[J18] Javier Alonso-Mora, Tobias Naegeli, Roland Siegwart, and Paul Beardsley. Jan. 2015. "Collision avoidance for aerial vehicles in multi-agent scenarios". In: *Autonomous Robots*. Link.

[J19] Alec Jacobson, Daniele Panozzo, Oliver Glauser, Cédric Pradalier, **Otmar Hilliges**, and Olga Sorkine-Hornung. July 2014. "Tangible and modular input device for character articulation". In: *ACM Transactions on Graphics*. Link.

[J20] Johannes Schöning, Jonathan Hook, Nima Motamedi, Patrick Olivier, Florian Echtler, Peter Brandl, Laurence Muller, Florian Daiber, **Otmar Hilliges**, and Markus Loechtefeld. Jan. 2009. "Building interactive multi-touch surfaces". In: *Journal of Graphics, GPU, and Game tools*. Link.

[J21] Lucia Terrenghi, **Otmar Hilliges**, and Andreas Butz. June 2007. "Kitchen Stories: Sharing Recipes with the Living Cookbook". In: *Personal Ubiquitous Comput.* Link.

Conference Papers

[CF1] Christoph Gebhardt and **Otmar Hilliges**. May 2021. "Optimization-based User Support for Cinematographic Quadrotor Camera Target Framing". In: *SIGCHI Conference on Human Factors in Computing Systems*. CHI '21.

[CF2] Alexis Block, Sammy Christen, Roger Gassert, **Otmar Hilliges**, and Katherine J. Kuchenbecker. Mar. 2021. "The Six Hug Commandments: Design and Evaluation of a Human-Sized Hugging Robot with Visual and Haptic Perception". In: *ACM/IEEE International Conference on Human-Robot Interaction*.

[CF3] Emre Aksan, Thomas Deselaers, Andrea Tagliasacchi, and **Otmar Hilliges**. Dec. 2020. "CoSE: Compositional Stroke Embeddings". In: *Advances in Neural Information Processing Systems (NeurIPS)*.

[CF4] Yufeng Zheng, Seonwook Park, Xucong Zhang, Shalini De Mello, and **Otmar Hilliges**. Dec. 2020. "Self-Learning Transformations for Improving Gaze and Head Redirection". In: *Neural Information Processing Systems (NeurIPS)*.

[CF5] Stefan Stevšić and **Otmar Hilliges**. Nov. 2020. "Spatial Attention Improves Iterative 6D Object Pose Estimation". In: *2020 International Conference on 3D Vision (3DV)*. IEEE.

[CF6] Manuel Kaufmann, Emre Aksan, Jie Song, Fabrizio Pece, Remo Ziegler, and **Otmar Hilliges**. Nov. 2020. "Convolutional Autoencoders for Human Motion Infilling". In: *2020 International Conference on 3D Vision (3DV)*. 3DV '20. IEEE.

[CF7] Thomas Langerak, Juan Zarate, David Lindlbauer, Christian Holz, and **Otmar Hilliges**. Oct. 2020. "Omni: Volumetric Sensing and Actuation of Passive Magnetic Tools for Dynamic Haptic Feedback". In: *Proceedings of the 33rd Annual ACM Symposium on User Interface Software and Technology*. UIST '20. Link.

[CF8] Thomas Langerak, Juan Zarate, Velko Vechev, David Lindlbauer, Daniele Panozzo, and **Otmar Hilliges**. Oct. 2020. "Optimal Control for Electromagnetic Haptic Guidance Systems". In: *Proceedings of the 33rd Annual ACM Symposium on User Interface Software and Technology*. UIST '20. Link.

[CF9] Xucong Zhang, Yusuke Sugano, Andreas Bulling, and **Otmar Hilliges**. Sept. 2020. "Learning-based Region Selection for End-to-End Gaze Estimation". In: *British Machine Vision Conference (BMVC 2020)*.

[CF10] Xu Chen, Zijian Dong, Jie Song, Andreas Geiger, and **Otmar Hilliges**. Aug. 2020. "Category Level Object Pose Estimation via Neural Analysis-by-Synthesis". In: *Computer Vision – ECCV 2020*. Link.

[CF11] Seonwook Park, Emre Aksan, Xucong Zhang, and **Otmar Hilliges**. Aug. 2020. "Towards End-to-End Video-Based Eye-Tracking". In: *Computer Vision – ECCV 2020*. Link.

[CF12] Jie Song, Xu Chen, and **Otmar Hilliges**. Aug. 2020. "Human Body Model Fitting by Learned Gradient Descent". In: *Computer Vision – ECCV 2020*. doi Link.

[CF13] Adrian Spurr, Umar Iqbal, Pavlo Molchanov, **Otmar Hilliges**, and Jan Kautz. Aug. 2020. "Weakly Supervised 3D Hand Pose Estimation via Biomechanical Constraints". In: *Computer Vision – ECCV 2020*. doi Link.

[CF14] Xucong Zhang, Seonwook Park, Thabo Beeler, Derek Bradley, Siyu Tang, and **Otmar Hilliges**. Aug. 2020. "ETH-XGaze: A Large Scale Dataset for Gaze Estimation Under Extreme Head Pose and Gaze Variation". In: *Computer Vision – ECCV 2020*. doi Link.

[CF15] Anna Feit, Lukas Vordemann, Seonwook Park, Caterina Bérubé, and **Otmar Hilliges**. June 2020. "Detecting Relevance during Decision-Making from Eye Movements for UI Adaptation". In: *Symposium on Eye Tracking Research and Applications*. ETRA '20. doi Link.

[CF16] Juan Jose Zarate, Thomas Langerak, Bernhard Thomaszewski, and **Otmar Hilliges**. Mar. 2020. "Contact-free Nonplanar Haptics with a Spherical Electromagnet". In: *2020 IEEE Haptics Symposium (HAPTICS)*. doi Link.

[CF17] Emre Aksan, Manuel Kaufmann, and **Otmar Hilliges**. Oct. 2019. "Structured Prediction Helps 3D Human Motion Modelling". In: *2019 IEEE/CVF International Conference on Computer Vision (ICCV)*. doi Link.

[CF18] Zhe He, Adrian Spurr, Xucong Zhang, and **Otmar Hilliges**. Oct. 2019. "Photo-Realistic Monocular Gaze Redirection Using Generative Adversarial Networks". In: *2019 IEEE/CVF International Conference on Computer Vision (ICCV)*. IEEE. doi Link.

[CF19] Seonwook Park, Shalini De Mello, Pavlo Molchanov, Umar Iqbal, **Otmar Hilliges**, and Jan Kautz. Oct. 2019. "Few-Shot Adaptive Gaze Estimation". In: *2019 IEEE/CVF International Conference on Computer Vision (ICCV)*. doi Link.

[CF20] Jie Song, Bjoern Andres, Michael Black, **Otmar Hilliges**, and Siyu Tang. Oct. 2019. "End-to-End Learning for Graph Decomposition". In: *2019 IEEE/CVF International Conference on Computer Vision (ICCV)*. doi Link.

[CF21] Jie Song, Xu Chen, and **Otmar Hilliges**. Oct. 2019. "Monocular Neural Image Based Rendering with Continuous View Control". In: *2019 IEEE/CVF International Conference on Computer Vision (ICCV)*. doi Link.

[CF22] Yuki Kubo, Yuto Koguchi, Buntarou Shizuki, Shin Takahashi, and **Otmar Hilliges**. Oct. 2019. "AudioTouch: Minimally Invasive Sensing of Micro-Gestures via Active Bio-Acoustic Sensing". In: *Proceedings of the 21st International Conference on Human-Computer Interaction with Mobile Devices and Services*. ACM. doi Link.

[CF23] Christoph Gebhardt, Brian Hecox, Bas van Opheusden, Daniel Wigdor, James Hillis, **Otmar Hilliges**, and Hrvoje Benko. Oct. 2019. "Learning Cooperative Personalized Policies from Gaze Data". In: *Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology*. UIST '19. doi Link.

[CF24] David Lindlbauer, Anna Maria Feit, and **Otmar Hilliges**. Oct. 2019. "Context-Aware Online Adaptation of Mixed Reality Interfaces". In: *Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology*. UIST '19. doi Link.

[CF25] Sammy Christen, Stefan Stevšić, and **Otmar Hilliges**. May 2019. "Demonstration-Guided Deep Reinforcement Learning of Control Policies for Dexterous Human-Robot Interaction". In: *2019 International Conference on Robotics and Automation (ICRA)*. doi Link.

[CF26] Luke T. Taverne, Matteo Cognolato, Tobias Butzer, Roger Gassert, and **Otmar Hilliges**. May 2019. "Video-based Prediction of Hand-grasp Preshaping with Application to Prosthesis Control". In: *2019 International Conference on Robotics and Automation (ICRA)*. doi Link.

[CF27] Emre Aksan and **Otmar Hilliges**. May 2019. "STCN: Stochastic Temporal Convolutional Networks". In: *International Conference on Learning Representations (ICLR)*.

[CF28] Velko Vechev, Juan Zarate, David Lindlbauer, Ronan Hinchet, Herbert Shea, and **Otmar Hilliges**. Mar. 2019. "TacTiles: Dual-mode Low-power Electromagnetic Actuators for Rendering Continuous Contact and Spatial Haptic Patterns in VR". In: *2019 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. IEEE. doi Link.

[CF29] Seonwook Park, Adrian Spurr, and **Otmar Hilliges**. Oct. 2018. "Deep Pictorial Gaze Estimation". In: *European Conference on Computer Vision (ECCV)*. ECCV '18. doi Link.

[CF30] Ronan Hinchet, Velko Vechev, Herbert Shea, and **Otmar Hilliges**. Oct. 2018. "DextrES: Wearable Haptic Feedback for Grasping in VR via a Thin Form-Factor Electrostatic Brake". In: *The 31st Annual ACM Symposium on User Interface Software and Technology - UIST '18*. UIST '18. doi Link.

[CF31] Benjamin Hepp, Debadeepta Dey, Sudipta N. Sinha, Ashish Kapoor, Neel Joshi, and **Otmar Hilliges**. Sept. 2018. "Learn-to-Score: Efficient 3D Scene Exploration by Predicting View Utility". In: *Computer Vision – ECCV 2018*. ECCV '18. doi Link.

[CF32] Adrian Spurr, Jie Song, Seonwook Park, and **Otmar Hilliges**. June 2018. "Cross-Modal Deep Variational Hand Pose Estimation". In: *2018 IEEE/CVF Conference on Computer Vision and Pattern Recognition*. doi Link.

[CF33] Seonwook Park, Xucong Zhang, Andreas Bulling, and **Otmar Hilliges**. June 2018. "Learning to Find Eye Region Landmarks for Remote Gaze Estimation in Unconstrained Settings". In: *ACM Symposium on Eye Tracking Research and Applications (ETRA)*. ETRA '18. doi Link.

[CF34] Emre Aksan, Fabrizio Pece, and **Otmar Hilliges**. Apr. 2018. "DeepWriting: Making Digital Ink Editable via Deep Generative Modeling". In: *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. CHI '18. doi Link.

[CF35] Seonwook Park, Christoph Gebhardt, Roman Rädle, Anna Feit, Hana Vrzakova, Niraj Dayama, Hui-Shyong Yeo, Clemens Klokmose, Aaron Quigley, Antti Oulasvirta, and **Otmar Hilliges**. Apr. 2018. "AdaM: Adapting Multi-

User Interfaces for Collaborative Environments in Real-Time". In: *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. CHI '18. doi Link.

[CF36] Adrian Spurr, Emre Aksan, and **Otmar Hilliges**. 2017a. "Guiding InfoGAN with Semi-Supervision". In: *Machine Learning and Knowledge Discovery in Databases*. Springer. doi Link.

[CF37] Partha Ghosh, Jie Song, Emre Aksan, and **Otmar Hilliges**. Oct. 2017. "Learning human motion models for long-term predictions". In: *2017 International Conference on 3D Vision (3DV)*. IEEE. doi Link.

[CF38] Fabrizio Pece, Juan Jose Zarate, Velko Vechev, Nadine Besse, Olexandr Gudozhnik, Herbert Shea, and **Otmar Hilliges**. Oct. 2017. "MagTics: Flexible and Thin Form Factor Magnetic Actuators for Dynamic and Wearable Haptic Feedback". In: *Proceedings of the 30th Annual ACM Symposium on User Interface Software and Technology*. UIST '17. doi Link.

[CF39] Jie Song, Limin Wang, Luc Van Gool, and **Otmar Hilliges**. July 2017. "Thin-Slicing Network: A Deep Structured Model for Pose Estimation in Videos". In: *2017 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. doi Link.

[CF40] Benjamin Hepp, Tobias Nageli, and **Otmar Hilliges**. Oct. 2016. "Omni-directional person tracking on a flying robot using occlusion-robust ultra-wideband signals". In: *2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. IEEE. doi Link.

[CF41] Nicolas de Palezieux, Tobias Nägeli, and **Otmar Hilliges**. Oct. 2016. "Duo-VIO: Fast, Light-weight, Stereo Inertial Odometry". In: *2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. IEEE. doi Link.

[CF42] Saiwen Wang, Jie Song, Jaime Lien, Ivan Poupyrev, and **Otmar Hilliges**. Oct. 2016. "Interacting with soli: Exploring fine-grained dynamic gesture recognition in the radio-frequency spectrum". In: *Proceedings of the 29th Annual Symposium on User Interface Software and Technology*. doi Link.

[CF43] Yifan Wang, Jie Song, Limin Wang, LucVan Gool, and **Otmar Hilliges**. Sept. 2016. "Two-Stream SR-CNNs for Action Recognition in Videos". In: *Procedings of the British Machine Vision Conference 2016*. BMVC '16. ACM. doi Link.

[CF44] Moritz Bächer, Benjamin Hepp, Fabrizio Pece, Paul G. Kry, Bernd Bickel, Bernhard Thomaszewski, and **Otmar Hilliges**. May 2016. "DefSense: Computational Design of Customized Deformable Input Devices". In: *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*. CHI '16. doi Link.

[CF45] Christoph Gebhardt, Benjamin Hepp, Tobias Nägeli, Stefan Stevšić, and **Otmar Hilliges**. May 2016. "Airways: Optimization-based Planning of Quadrotor Trajectories according to High-Level User Goals". In: *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*. CHI '16. doi Link.

[CF46] Petri Tanskanen, Tobias Naegeli, Marc Pollefeys, and **Otmar Hilliges**. Sept. 2015. "Semi-Direct EKF-based Monocular Visual-Inertial Odometry". In: *2015 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. IEEE. doi Link.

[CF47] Gábor Sörös, Stephan Semmler, Luc Humair, and **Otmar Hilliges**. Sept. 2015. "Fast Blur Removal for Wearable QR Code Scanners". In: *Proceedings of the 2015 ACM International Symposium on Wearable Computers - ISWC '15*. ACM. doi Link.

[CF48] Jibin Ou, Martin Vechev, and **Otmar Hilliges**. Apr. 2015. "An Interactive System for Data Structure Development". In: *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*. CHI '15. doi Link.

[CF49] Jie Song, Gábor Sörös, Fabrizio Pece, Sean Ryan Fanello, Shahram Izadi, Cem Keskin, and **Otmar Hilliges**. Oct. 2014. "In-air Gestures Around Unmodified Mobile Devices". In: *Proceedings of the 27th annual ACM symposium on User interface software and technology*. UIST '14. doi Link.

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