Anna Maria Feit

Curriculum Vitae

Saarland Informatics Campus E1 7
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I am an Associate Professor in Computer Science, leading the Computational Interaction group which promotes and studies the use of computational methods within the field of Human-Computer Interaction. My work focuses on the **optimization and adaptation of user interfaces**. To that end, I combine algorithmic methods with behavioral science to develop a formal understanding of users' interactive behavior and automate design processes.

Academic Positions

since 01/2021 **Tenure-track Associate Professor**, *Saarland University*, Computational Interaction Group, Saarbrücken, Germany.

2018-2020 **Postdoctoral Researcher**, *ETH Zurich, Department of Computer Science*, Advanced Interactive Technologies Group, led by Prof. Otmar Hilliges, Zurich, Switzerland.

2014-2018 **Doctoral Student**, *Aalto University, Department of Electrical Engineering*, User Interfaces Group, led by Prof. Antti Oulasvirta, Helsinki, Finland.
Note: includes 8 months parental leave

04/2016–07/2016 **Research Intern**, *Microsoft Research, Enable Group*, Redmond, USA.
Topic: Accuracy and precision of eye tracking, text entry by eye gaze

10/2013–03/2014 **Researcher**, *Max-Planck Institute for Informatics and MMCI, Human-Computer Interaction Group, led by Antti Oulasvirta*, Saarbrücken, Germany.

Education

2014-2018 **Doctor of Science (Technology)**,
Graduated with Distinction,
Aalto University, Helsinki Finland
Supervisor: Prof. Antti Oulasvirta, User Interfaces Group,
Thesis: *Assignment Problems for Optimizing Text Input.*
Thesis Committee: Dr. Shumin Zhai (Google Inc.), Prof. Michel Beaudouin-Lafon (Université Paris-Sud), Prof. Geehyuk Lee (KAIST)

2012–2013 **Master of Computer Science**,
GPA – 1.2, Honors Degree,
Saarland University, Saarbrücken, Germany.
Thesis: *PianoText: Transferring Musical Expertise to Text Entry*,
Supervisor: Dr. Antti Oulasvirta

2008–2012 **Bachelor of Computer Science**,
GPA – 1.6 ,
Saarland University, Saarbrücken, Germany,
Minor: Computational linguistics.
Thesis: *3D Room Designer: a Collaborative Web Application with XML3D and Sirikata*,
Supervisor: Prof. Philipp Slusallek

Research Grants and Projects

2023 - 2026 Foundations of Perspicuous Software Systems (CPEC), funded within DFG Transregional Collaborative Research Centre 248: Principal investigator (Project E6)

Recognitions and Awards

2019 **ACM SIGCHI Outstanding Dissertation Award** (top 3 Dissertations in the field)

2019 *Aalto Doctoral Dissertation Award (top 10%)*

2017-2021 *Best paper Awards and Honorable Mentions (* for full papers at CHI '17, CHI '18, CHI'21, MobileHCI '19)

2012-2013 Saarbrücken Graduate School of Computer Science

Invited Talks

2024, 2019, 2017 **Invited Lecturer**, *Summer School on Computational Interaction*.

2023 **Invited Lecturer**, *Dagstuhl Lehrerfortbildung in Informatik*.

04/2020 **Panel**, *How to do HCI research if your users are off limits?*.

05/2019 **Conference talk**, *ACM CHI Conference on Human Factors in Comuting System*, Outstanding Dissertation Award: Assignment Problems for Optimizing Text Input.

09/2018 **Conference talk**, *International Conference on Operations Research*, Optimizing Special Character Entry: the Case of the French Keyboard Standard.

07/2018 **Seminar talk**, *Dagstuhl Seminar on Computational Interactivity*, Optimization of Text Input.

Awards and Honors

2019 Thesis Award, **ACM SIGCHI Outstanding Dissertation Award**, 1000$

Thesis Award, *Aalto Doctoral Dissertation Award*, 3000€

2017 Travel Grant, *CHI 2017 Doctoral Consortium travel grant*

2015 Travel Grant, *ACM-W womENcourage conference*

2015 Student Research Grant, *Nokia Scholarship*, 5000€

2014 Student Research Grant, *HPY Research Foundation grant*, 3000€

Service & Involvement

2022, 2024 Program Committee Member at ACM CHI '22, '24

2023 ACM CHI Family Chair

2022 Main Organizer, Summer School on Computational Interaction, Saarbrücken

2022 Mentor, Fix the Leaking Pipeline Program

2020, 2017 Program Committee Member at ACM MobileHCI '20

since 2019 Mentor, Cyber Mentor Plus

2017 Editor of the Report from Dagstuhl Seminar on Computational Interactivity

2016 Student Organizer, Summer School on Computational Interaction, Helsinki

since 2015 Reviewer for CHI, UIST, TOCHI, Nature, IMWUT, TiiS, IJHCS MobileHCI, etc.

10/2014 Student Volunteer at NordiCHI 2014, Helsinki, Finland

Memberships in Scientific Groups and Societies

since 2021 Transregional Collaborative Research Centre 248 *Foundations of Perspicuous Software Systems*, Elected Member, Principal Investigator, and Board Member

since 2020 German Informatics Society (GI)

since 2013 Association for Computing Machinery (ACM)

Student Supervision

PhD Students (ongoing)

since 2023 Zekun Wu

Bachelor's and Master's Students (past)

2024 Self-Supervised Contrastive Learning for Video Representation with Local Alignment in Expert-Learner Analysis *Keyne Oei*

Impact of Visual Adaptation of Interfaces on Users' Attention in Presence of Cognitive Load *Anwesha Das*

2023 StitchSense: A Deep Learning Approach to Counting Knitting Stitches in Real-Time using Hand-Based IMU Sensors *Laurent Hug*

2022 Effects of Visual Highlighting on Users' Attention, Decision Making, and Autonomy *Cedric Faas*

Conference full papers (fully refereed)

2023

Christoph Albert Johns, João Marcelo Evangelista Belo, **Anna Maria Feit**, Clemens Nylandsted Klokmose, and Ken Pfeuffer. Towards flexible and robust user interface adaptations with multiple objectives. In *Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology*, UIST '23, New York, NY, USA, 2023. ACM. doi: 10.1145/3586183.3606799

Florian Lehmann, Itto Kornecki, Daniel Buschek, and **Anna Maria Feit**. Typing behavior is about more than speed: Users' strategies for choosing word suggestions despite slower typing rates. *Proc. ACM Hum.-Comput. Interact.*, 7(MHCI), sep 2023. doi: 10.1145/3604276

2022

João Marcelo Evangelista Belo, Mathias N Lystbäk, **Anna Maria Feit**, Ken Pfeuffer, Peter Kán, Antti Oulasvirta, and Kaj Grønbæk. Auit – the adaptive user interfaces toolkit for designing xr applications. In *Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology*. ACM, 2022. doi: 10.1145/3526113.3545651

2021

🏆João Marcelo Evangelista Belo, **Anna Maria Feit**, Tiare Feuchtner, and Kaj Grønbæk. Xrgonomics: Facilitating the creation of ergonomic 3d interfaces. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. ACM, 2021. ISBN 9781450380966. doi: 10.1145/3411764.3445349

Lorenz Hetzel, John Dudley, **Anna Maria Feit**, and Per Ola Kristensson. Complex interaction as emergent behaviour: Simulating mid-air virtual keyboard typing using reinforcement learning. *IEEE Transactions on Visualization and Computer Graphics*, 27:4140–4149, 2021. doi: 10.1109/TVCG.2021.3106494

2020

Anna Maria Feit, Lukas Vordemann, Seonwook Park, Caterina Bérubé, and Otmar Hilliges. Detecting relevance during decision-making from eye movements for ui adaptation. In *Symposium on Eye Tracking Research and Applications (ETRA '20)*. ACM, 2020. doi: 10.1145/3379155.3391321

2019

David Lindlbauer, **Anna Maria Feit**, and Otmar Hilliges. Context-aware online adaptation of mixed reality interfaces. In *Proc. of the 32nd Annual ACM Symposium on User Interface Software and Technology*. ACM, 2019. doi: 10.1145/3332165.3347945

🏆 Kseniia Palin, **Anna Maria Feit**, Sunjun Kim, Per Ola Kristensson, and Antti Oulasvirta. How do People Type on Mobile Devices? Observations from a Study with 37,000 Volunteers. In *Proceedings of 21st International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI'19)*, MobileHCI '19. ACM, 2019. doi: https://doi.org/10.475/123_4

2018

🏆 Vivek Dhakal, **Anna Maria Feit**, Per Ola Kristensson, and Antti Oulasvirta. Observations on typing from 136 million keystrokes. In *Proc. CHI Conference on Human Factors in Computing Systems*, CHI '18, New York, NY, USA, 2018. ACM. doi: 10.1145/3173574.3174220

Seonwook Park, Christoph Gebhardt, Roman Rädle, and **Anna Maria Feit** et al. Adam: Adapting multi-user interfaces for collaborative environments in real-time. In *Proc. CHI Conference on Human Factors in Computing Systems*, CHI '18, New York, NY, USA, 2018. ACM. doi: 10.1145/3173574.3173758

Pascal Knierim, Valentin Schwind, **Anna Maria Feit**, Florian Nieuwenhuizen, and Niels Henze. Physical keyboards in virtual reality: Analysis of typing performance and effects of avatar hands. In *Proc. CHI Conference on Human Factors in Computing Systems*, CHI '18, New York, NY, USA, 2018. ACM. doi: 10.1145/3173574.3173919

Marco Speicher, **Anna Maria Feit**, Pascal Ziegler, and Antonio Krüger. Selection-based text entry in virtual reality. In *Proc. CHI Conference on Human Factors in Computing Systems*, CHI '18, New York, NY, USA, 2018. ACM. doi: 10.1145/3173574.3174221

2017

🏆 **Anna Maria Feit** and Shane Williams et al. Toward everyday gaze input: Accuracy and precision of eye tracking and implications for design. In *Proc. CHI Conference on Human Factors in Computing Systems*, CHI '17, New York, NY, USA, 2017. ACM. doi: 10.1145/3025453.3025599

2016

Anna Maria Feit, Daryl Weir, and Antti Oulasvirta. How we type: Movement strategies and performance in everyday typing. In *Proc. CHI Conference on Human Factors in Computing Systems*, CHI '16, New York, NY, USA, 2016. ACM. doi: 10.1145/2858036.2858233

2015

Srinath Sridhar, **Anna Maria Feit**, Christian Theobalt, and Antti Oulasvirta. Investigating the dexterity of multi-finger input for mid-air text entry. In *Proc. CHI Conference on Human Factors in Computing Systems*, CHI '15, New York, NY, USA, 2015. ACM. doi: 10.1145/2702123.2702136

2014

Anna Maria Feit and Antti Oulasvirta. Pianotext: Redesigning the piano keyboard for text entry. In *Proc. DIS Conference on Designing Interactive Systems*, DIS '14, New York, NY, USA, 2014. ACM. doi: 10.1145/2598510.2598547

Journal papers (fully refereed)

2021

Feit, Anna Maria, Mathieu Nancel, Maximilian John, Andreas Karrenbauer, Daryl Weir, and Antti Oulasvirta. Azerty amélioré: Computational design on a national scale. *Commun. ACM*, 64(2):48–58, January 2021. ISSN 0001-0782. doi: 10.1145/3382035

2017

Antti Oulasvirta, **Anna Maria Feit**, Perttu Lähteenlahti, and Andreas Karrenbauer. Computational support for functionality selection in interaction design. *ACM Transactions on Computer-Human Interaction*, 24(5), October 2017. doi: 10.1145/3131608

Book chapters

2021

Seonwook Park, **Anna Maria Feit**, and Xucong Zhang. Eye gaze estimation and its applications. In Otmar Li Yang and Hilliges, editors, *Artificial Intelligence for Human Computer Interaction: A Modern Approach*, pages 99–130. Springer International Publishing, 2021. doi: 10.1007/978-3-030-82681-9_4

Theses

2018

🏆 **Anna Maria Feit**. *Assignment Problems for Optimizing Text Input.* Ph.D. Dissertation, Aalto University, 2018

Workshop papers and demos

2021

Thomas Langerak, Sammy Christen, Anna Maria Feit, and Otmar Hilliges. Generalizing user models through hybrid hierarchical control; generalizing user models through hybrid hierarchical control, 2021

2017

Anna Maria Feit. Computational design of input methods. In *Proc of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems*, New York, NY, USA, 2017b. ACM. doi: 10.1145/3027063.3027134

2016

Anna Maria Feit and Mathieu Nancel. Hands Up: Who Knows Something About Performance and Ergonomics of Mid-Air Hand Gestures, May 2016. Presented at the CHI 2016 Workshop on Mid-Air Haptics and Displays

2015

Anna Maria Feit, Myroslav Bachynskyi, and Srinath Sridhar. Towards multi-objective optimization for ui design, April 2015a. Presented at the CHI 2015 Workshop on Principles, Techniques and Perspectives on Optimization and HCI

Anna Maria Feit, Srinath Sridhar, Christian Theobalt, and Antti Oulasvirta. Investigating multi-finger gestures for mid-air text entry, April 2015b. Presented at the CHI 2015 Workshop on Workshop on Text Entry on the Edge

2013

Anna Maria Feit and Antti Oulasvirta. Pianotext: Transferring musical expertise to text entry. In *CHI '13 Extended Abstracts on Human Factors in Computing Systems*, CHI EA '18, New York, NY, USA, 2013. ACM. doi: 10.1145/2468356.2479606

Standards

2018

NF Z71-300. Interfaces utilisateurs – Dispositions de clavier bureautique français. Standard, Association fran caise de normalisation, Paris, Fr, April 2019

Invited Publications and Talks

2019

🏆 **Anna Maria Feit**. SIGCHI Outstanding Dissertation Award: Assignment Problems for Optimizing Text Input. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems*, CHI EA '19, New York, NY, USA, 2019. ACM. doi: 10.1145/3290607.3313773

2017

Anna Maria Feit. Optimization of Text Input, Jun 2017a. Invited talk at the Dagstuhl Seminar on Computational Interactivity

Anna Maria Feit and Antti Oulasvirta. Optimizing special character entry: the case of the french keyboard standard, Sep 2017. Invited Talk at the International Conference on Operations Research

2015

Anna Maria Feit, Srinath Sridhar, Christian Theobalt, and Antti Oulasvirta. Text is in the air... investigating multi-finger gestures for mid-air text entry, Sep 2015c. Accpeted talk at the ACM womEncourage conference

2014

Joanna Maria Dauner, Emre Karagozler, Matthew Glisson, Chris Speed, Mark Hartswood, Eric Laurier, Siobhan Magee, Fionn Tynan-O'Mahony, Martin de Jode, Andrew Hudson-Smith, Jiffer Harriman, **Anna Maria Feit**, and Oulasvirta Antti. Demo hour. *Interactions*, 21(6), October 2014. doi: 10.1145/2663310. Featured Article