

Anna Maria Feit

Curriculum Vitae

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* 23.12.1988, Püttlingen
Nationality: German

I am a researcher in the area of **computational interaction** 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 09/2018 **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

Conference full papers (fully refereed)

- 2020 **Anna Maria Feit**, Mathieu Nancel, and Maximilian John et al. Azerty amélioré: Computational design on a national scale. *Communications of the ACM*, 2020. *to appear*
- 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)

- 2019 **Anna Maria Feit**, Mathieu Nancel, Daryl Weir, Maximilian John, Andreas Karrenbauer, and Antti Oulasvirta. Azerty amélior  : Computational design on a national scale. *Submitted to the Communications of the ACM (major revisions)*, 2019
- 2017 Antti Oulasvirta, **Anna Maria Feit**, Perttu L  hteenlahti, 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

Workshop papers and demos

- 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 '13, 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 française de normalisation, Paris, Fr, April 2019

Theses

- 2018 🏆 **Anna Maria Feit.** *Assignment Problems for Optimizing Text Input.* Ph.D. Dissertation, Aalto University, 2018
- 2013 **Anna Maria Feit.** Pianotext: Transferring musical expertise to text entry. Master's thesis, Saarland University, 2013
- 2012 **Anna Maria Feit.** 3D Room Designer: a Collaborative Web Application Based on XML3D and Sirikata. Bachelor's thesis, Saarland University, 2012

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. Accepted talk at the ACM Women Encourage conference
- 2014 Joanna Maria Dauner, Emre Karagozler, Matthew Glisson, Chris Speed, Mark Hartwood, 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

Recognitions and Awards

- 2019 **ACM SIGCHI Outstanding Dissertation Award** (top 3 Dissertations in the field)
- 2019 *Aalto Doctoral Dissertation Award (top 10%)*
- 2017-2019 *Best paper Honorable Mention (top 20%)* for full papers at CHI '17, CHI '18, MobileHCI '19
- 2012-2013 Saarbrücken Graduate School of Computer Science
- 2009-2012 Honors Program for CS Bachelor students at Saarland University

Teaching & Supervision

Guest Lecturer

- 2018, 2019 *Computational Design*, Human-Computer Interaction course, ETH Zurich, Switzerland
- 2019 *Exact optimization methods for user interface design*, Summer School on Computational Interaction, Columbia University, New York, USA
- 2017 *Integer Programming*, ACM Summer School on Computational Interaction, ETH Zurich, Switzerland
- 2015 *Keyboard optimization with the assignment problem*, SICSA Summer School on Computational Interaction, University of Glasgow, Schottland
- 2015 *Models of human performance*, User Interfaces course, Aalto University, Finland
- 2014 *Keyboards*, User Interfaces course, Aalto University, Finland

Seminar Organizer

- 2019 & 2020 *Seminar on Computational Interaction*, ETH Zurich, Switzerland

Head teaching assistant

- 2018 & 2019 *Human-Computer Interaction*, ETH Zurich, Switzerland

Student teaching assistant

- 2009 *Programmierung 1*, Saarland University, Germany

Thesis Supervision

- 2019 Optimal Selection of Visualizations for Quantified-Selfers, *Yugdeep Bangar*
Word Suggestion Usage in Mobile Keyboard, *Itto Kornecki*
Mixed-Initiative Methods for Designing Sokoban-like Puzzles, *Kevin De Keyser*
- 2018 Adapting a Financial Dashboard to Support Visual Search, *Lukas Vordemann*
- 2017 Identification of Typing Behaviors from Large Typing Datasets, *Vivek Dhakal*
Selection-Based Text Entry in Virtual Reality, *Pascal Ziegler*
- 2016 Notification Brokering Algorithm for Smartphones, *Mehmet Okatan*
- 2015 Fast Application Switch for Mobile Multitask Optimization, *Chen Wang*

Invited Talks

- 05/2019 **Conference talk**, *ACM CHI Conference on Human Factors in Computing Systems*, 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.

Grants

- 2019 **ACM SIGCHI Outstanding Dissertation Award**, 1000\$
Aalto Doctoral Dissertation Award, 3000€
- 2017 *CHI 2017 Doctoral Consortium travel grant*
- 2015 *Nokia Scholarship*, 5000€
- 2105 Travel Grant, *ACM-W womENCourage conference*
- 2014 *HPY Research Foundation grant*, 3000€

Service & Involvement

- 2020 Program Committee Member at ACM MobileHCI '20
- since 2019 Mentor for school girls in the German Cyber Mentor Plus program
- 2017 Program Committee Member at ACM MobileHCI '17
- 2017 Editor of the Report from Dagstuhl Seminar on Computational Interactivity
- 2016 Organization of the 2nd Summer School on Computational Interaction, Helsinki
- since 2015 Reviewer for CHI, UIST, TOCHI, IMWUT, TiiS, IJHCS MobileHCI, etc.
- 10/2014 Student Volunteer at NordiCHI 2014, Helsinki, Finland

Selected Press

- 2019 MIT Technology Review (USA). *The fastest texters in the world couldn't care less about texting.*
New York Times (USA). *Here's How to Type Faster on Your Phone.*
Interview with SRF (Switzerland). *Was kommt nach QWERTY? Die Smartphone-Tastatur - ein Relikt aus der Vergangenheit.*
IEEE Spectrum (USA). *Merveilleux! New AZERTY Keyboard Makes It Easier to Type in French.*
- 2018 BBC (UK). *New research has found the fastest typists use a certain technique – but experts disagree on whether it's worth learning.*
- 2016 Washington Post (USA). *Is touch typing overrated?*
Süddeutsche Zeitung (Germany). *Anarchie statt Zehn-Finger-System.*
Youtube Video. *How we type: Movement Strategies and Performance in Everyday Typing.* > 1,000,000 views.
- 2014 Appearance at *TV Total*, Host: Stefan Raab, ProSieben