



# ZHANNA SARSENBAYEVA

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<https://zhannina.github.io/>

## ACADEMIC APPOINTMENTS

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**Lecturer** September 2022 - ongoing  
The University of Sydney, Australia

**Doreen Thomas Postdoctoral Fellow** March 2020 – August 2022  
The University of Melbourne, Australia

## EDUCATION

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**The University of Melbourne, Melbourne, Australia** 2017 – 2020  
**PhD** in Computer Science (Engineering)  
*Thesis: Quantifying the Effects of Situationally-Induced Impairments and Disabilities on Mobile Interaction*

**University of Oulu, Oulu, Finland** 2014 – 2016  
**MSc** in Computer Science and Engineering  
*Thesis grade - Excellent*

**University College London, London, UK** 2007 – 2010  
**BSc** in Computer Science (Hons.)

## AWARDS AND RECOGNITION

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**2022–2023:** Australia-Germany Joint Research Cooperation Scheme (24,800 AUD)

**2021:** CIS ECR grant (20,000 AUD), Faculty of Engineering and Information Technology, The University of Melbourne, Australia

**2020:** Doreen Thomas Postdoctoral Fellowship (298,375 AUD), The University of Melbourne, Australia

**2019:** Gaetano Borriello Outstanding Student Award for outstanding research contributions and service to the field of ubiquitous and pervasive computing, UbiComp'19, London, UK

**2019:** Google PhD Fellowship in Human-Computer Interaction (15,000 AUD)

**2019:** Diane Lemaire Scholarship, Faculty of Engineering and Information Technology, The University of Melbourne (7,000 AUD)

**2018:** Best Presentation Award – Honourable Mention, Doctoral Colloquium, UbiComp'18, Singapore

**2018:** UbiComp'18 Travel Grant, Singapore

**2018:** Google PhD Travel Scholarship

**2017:** SIGCHI Best of OzCHI Honourable Mention Award (top 5% of papers), OzCHI 2017, Brisbane, Australia

**2017:** Google PhD Travel Scholarship

**2017:** Melbourne Research Scholarship, The University of Melbourne

**2017:** Best Poster Award – Honourable Mention, Doctoral Colloquium, The University of Melbourne, Australia

**2016:** Best Project Award, International UBI Summer School 2016, Oulu, Finland

**2015:** Best Presentation Award, International UBI Summer School 2015, Oulu, Finland

## TEACHING

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### The University of Melbourne

**2022** Media Computation (COMP10003, Lecturer, 67%)

**2021** Media Computation (COMP10003, Lecturer, 50%)

**2019** Fundamentals of Interaction Design (INFO10003, Tutor)

**2019** Designing Novel Interactions (INFO90003, Tutor)

**2018** Fundamentals of Interaction Design (INFO10003, Tutor)

**2017** Fundamentals of Interaction Design (INFO10003, Tutor)

**2017** Graphics and Interaction (COMP30019, Tutor)

## ADDITIONAL WORK EXPERIENCE

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### Research Assistant

Feb 2019 – Oct 2019

The University of Melbourne, Melbourne, Australia

### Android Developer

2016 – 2017

<https://intellection.kz/>

Almaty, Kazakhstan

### Research Assistant

Sep 2015 – Dec 2016

Center for Ubiquitous Computing

University of Oulu, Finland

### Teaching Assistant

2011 – 2014

Nazarbayev University, Astana, Kazakhstan

### Technical Consultant

2010 – 2011

Medtronic, Almaty, Kazakhstan

## EXTRACURRICULAR ACTIVITIES

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**2019:** Melbourne Knowledge Week, Melbourne, Australia (Demo: Emotion Detection Using Smartphones)

**2018:** Secretary at Computer and Information Systems Research Students Organisation (CIS-GReS), The University of Melbourne, Australia

**2017:** The University of Melbourne Open Day, Australia (Demo: Emotion Detection Using Smartphones)

## ACADEMIC SERVICE

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**2021:** Papers Chair, OzCHI'21, Australia

**2021:** AC for CHI, MobileHCI

**2020:** Video Previews Co-Chair, CHI'20, Hawaii, USA

**2020:** External Reviewer for CHI, MobileHCI, IMWUT

**2019:** Co-organiser, Workshop on “Addressing the Challenges of Situationally-Induced Impairments and Disabilities in Mobile Interaction”, CHI'19, Glasgow, UK

**2019:** Video Previews Co-Chair, CHI'19, Glasgow, UK

**2019:** External Reviewer for IJHCS, IMWUT

- 2018:** Co-organiser, Workshop on “Ubiquitous Mobile Sensing: Behaviour, Mood, and Environment”, UbiComp’18, Singapore
- 2018:** Student Volunteer, UbiComp’18, Singapore
- 2018:** Student Volunteer Chair, OzCHI’18, Melbourne, Australia
- 2018:** Student Design Challenge Chair, OzCHI’18, Melbourne, Australia
- 2018:** External Reviewer for IMWUT, MobileHCI, OzCHI
- 2017:** External Reviewer for IMWUT, OzCHI
- 2017:** Student Volunteer, OzCHI 2017, Brisbane, Australia
- 2016:** Student Volunteer, International UBI Summer School 2016, Oulu, Finland

## SUPERVISED MSC THESES

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- 2021:** Yifan Cai (MSc, Co-supervisor) **2020:** Sicheng Sun (MSc, Co-supervisor) **2020:** Chuangang Xia (MSc, Primary supervisor) **2020:** EYLUL ERTAY and HAO HUANG (MSc, Co-supervisor) **2020:** SHU YAN (MSc, Co-supervisor (Tech)) **2018:** SILAN LI (MSc, Co-supervisor (Tech)) **2018:** JIA LIU (MSc, Co-supervisor (Tech))

## REFERENCES

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Available upon request

## INVITED TALKS

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- 2021:** “Accessibility Research in HCI”, Seminar series at the School of Computing and Information Systems, The University of Melbourne, Australia
- 2019:** “Situational Impairments in Mobile Interaction”, The University of Dundee, UK
- 2019:** “Situational Impairments in Mobile Interaction”, The University of Melbourne, Australia
- 2018:** “Enhancing Mobile Interaction during Situational Impairments”, The University of Manchester, UK

## PUBLICATIONS

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### 2022

Zhanna Sarsenbayeva, Niels van Berkel, Eduardo Velloso, Jorge Goncalves, and Vassilis Kostakos. Methodological standards in accessibility research on motor impairments: A survey. *ACM Comput. Surv.*, May 2022

Benjamin Tag, Zhanna Sarsenbayeva, Anna L. Cox, Greg Wadley, Jorge Goncalves, and Vassilis Kostakos. Emotion trajectories in smartphone use: Towards recognizing emotion regulation in-the-wild. *International Journal of Human-Computer Studies*, 166:102872, 2022

Chaofan Wang, Kangning Yang, Weiwei Jiang, Jing Wei, Zhanna Sarsenbayeva, Jorge Goncalves, and Vassilis Kostakos. Hand Hygiene Quality Assessment using Image-to-Image Translation. *MICCAI 2022*

Weiwei Jiang, Difeng Yu, Chaofan Wang, Zhanna Sarsenbayeva, Niels van Berkel, Jorge Goncalves, and Vassilis Kostakos. Near-infrared imaging for information embedding and extraction with layered structures. *ACM Trans. Graph.*, apr 2022. Just Accepted

Chaofan Wang, Weiwei Jiang, Kangning Yang, Zhanna Sarsenbayeva, Benjamin Tag, Tilman Dingler, Jorge Goncalves, and Vassilis Kostakos. A system for computational assessment of hand hygiene techniques. *Journal of Medical Systems*, 46(6):1–12, 2022

Benjamin Tag, Niels van Berkel, Andrew W. Vargo, Zhanna Sarsenbayeva, Tyler Colasante, Greg Wadley, Sarah Webber, Wally Smith, Peter Koval, Tom Hollenstein, Jorge Goncalves, and Vassilis Kostakos. Impact of the global pandemic upon young people's use of technology for emotion regulation. *Computers in Human Behavior Reports*, 6:100192, 2022

## 2021

Chaofan Wang, Weiwei Jiang, Kangning Yang, Difeng Yu, Joshua Newn, Zhanna Sarsenbayeva, Jorge Goncalves, and Vassilis Kostakos. Electronic monitoring systems for hand hygiene: Systematic review of technology. *J Med Internet Res*, 23(11):e27880, Nov 2021 (**IF: 5.43**)

Eylül Ertay, Hao Huang, Zhanna Sarsenbayeva, and Tilman Dingler. *Challenges of Emotion Detection Using Facial Expressions and Emotion Visualisation in Remote Communication*, page 230236. Association for Computing Machinery, New York, NY, USA, 2021

Kangning Yang, Chaofan Wang, Yue Gu, Zhanna Sarsenbayeva, Benjamin Tag, Tilman Dingler, Greg Wadley, and Jorge Goncalves. Behavioral and physiological signals-based deep multimodal approach for mobile emotion recognition. *IEEE Transactions on Affective Computing*, 2021 (**IF: 10.506**)

Weiwei Jiang, Zhanna Sarsenbayeva, Niels van Berkel, Chaofan Wang, Difeng Yu, Jing Wei, Jorge Goncalves, and Vassilis Kostakos. User trust in assisted decision-making using miniaturized near-infrared spectroscopy. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, CHI '21, New York, NY, USA, 2021. Association for Computing Machinery (**CHI21, CORE A\***)

## 2020

Kangning Yang, Chaofan Wang, Zhanna Sarsenbayeva, Benjamin Tag, Tilman Dingler, Greg Wadley, and Jorge Goncalves. Benchmarking commercial emotion detection systems using realistic distortions of facial image datasets. *The visual computer*, 37(6):1447–1466, 2021 (**IF: 1.456**)

Zhanna Sarsenbayeva, Gabriele Marini, Niels van Berkel, Chu Luo, Weiwei Jiang, Kangning Yang, Greg Wadley, Tilman Dingler, Vassilis Kostakos, and Jorge Goncalves. *Does Smartphone Use Drive Our Emotions or Vice Versa? A Causal Analysis*, page 115. Association for Computing Machinery, New York, NY, USA, 2020 (**CORE A\***)

Danula Hettiachchi, Zhanna Sarsenbayeva, Fraser Allison, Niels van Berkel, Tilman Dingler, Gabriele Marini, Vassilis Kostakos, and Jorge Goncalves. *"Hi! I Am the Crowd Tasker" Crowdsourcing through Digital Voice Assistants*, page 114. Association for Computing Machinery, New York, NY, USA, 2020 (**CORE A\***)

Chaofan Wang, Zhanna Sarsenbayeva, Xiuge Chen, Tilman Dingler, Jorge Goncalves, and Vassilis Kostakos. Accurate measurement of handwash quality using sensor armbands: Instrument validation study. *JMIR Mhealth Uhealth*, 8(3):e17001, Mar 2020 (**IF: 4.31**)

Niels van Berkel, Jorge Goncalves, Simo Hosio, Zhanna Sarsenbayeva, Eduardo Velloso, and Vassilis Kostakos. Overcoming compliance bias in self-report studies: A cross-study analysis. *International Journal of Human-Computer Studies*, 134:1–12, 2020 (**IF: 3.163**)

Weiwei Jiang, Gabriele Marini, Niels van Berkel, Zhanna Sarsenbayeva, Zheyu Tan, Chu Luo, Xin He, Tilman Dingler, Jorge Goncalves, Yoshihiro Kawahara, and Vassilis Kostakos. Probing sucrose contents in everyday drinks using miniaturized near-infrared spectroscopy scanners. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.*, 3(4), dec 2019 (**CORE A\***)

Zhanna Sarsenbayeva, Benjamin Tag, Shu Yan, Vassilis Kostakos, and Jorge Goncalves. Using video games to regulate emotions. In *32nd Australian Conference on Human-Computer Interaction, OzCHI '20*, page 755759, New York, NY, USA, 2020. Association for Computing Machinery

Garrett Tigwell, Zhanna Sarsenbayeva, Benjamin Gorman, David Flatla, Jorge Goncalves, Yeliz Yesilada, and Jacob Wobbrock. Future directions for situationally induced impairments and disabilities research. *ACM Interactions Blog*, 2020

## 2019

Zhanna Sarsenbayeva, Niels van Berkel, Danula Hettiachchi, Weiwei Jiang, Tilman Dingler, Eduardo Velloso, Vassilis Kostakos, and Jorge Goncalves. Measuring the effects of stress on mobile interaction. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.*, 3(1), mar 2019 (**CORE A\***)

Zhanna Sarsenbayeva, Niels van Berkel, Weiwei Jiang, Danula Hettiachchi, Vassilis Kostakos, and Jorge Goncalves. Effect of ambient light on mobile interaction. In David Lamas, Fernando Loizides, Lennart Nacke, Helen Petrie, Marco Winckler, and Panayiotis Zaphiris, editors, *Human-Computer Interaction – INTERACT 2019*, pages 465–475, Cham, 2019. Springer International Publishing (**CORE A**)

Zhanna Sarsenbayeva, Vassilis Kostakos, and Jorge Goncalves. Situationally-induced impairments and disabilities research. *arXiv preprint arXiv:1904.06128*, 2019

Chaofan Wang, Zhanna Sarsenbayeva, Chu Luo, Jorge Goncalves, and Vassilis Kostakos. Improving wearable sensor data quality using context markers. In *Adjunct Proceedings of the 2019 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2019 ACM International Symposium on Wearable Computers*, UbiComp/ISWC ’19 Adjunct, page 598601, New York, NY, USA, 2019. Association for Computing Machinery

Garrett W. Tigwell, Zhanna Sarsenbayeva, Benjamin M. Gorman, David R. Flatla, Jorge Goncalves, Yeliz Yesilada, and Jacob O. Wobbrock. Addressing the challenges of situationally-induced impairments and disabilities in mobile interaction. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems*, CHI EA ’19, page 18, New York, NY, USA, 2019. Association for Computing Machinery

Chu Luo, Aku Visuri, Simon Klakegg, Niels van Berkel, Zhanna Sarsenbayeva, Antti Möttönen, Jorge Goncalves, Theodoros Anagnostopoulos, Denzil Ferreira, Huber Flores, and others. Energy-efficient prediction of smartphone unlocking. *Personal and Ubiquitous Computing*, 23(1):159–177, 2019

## 2018

Zhanna Sarsenbayeva, Niels van Berkel, Eduardo Velloso, Vassilis Kostakos, and Jorge Goncalves. Effect of distinct ambient noise types on mobile interaction. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.*, 2(2), Jul 2018 (**CORE A\***)

🏆 Simon Klakegg, Jorge Goncalves, Chu Luo, Aku Visuri, Alexey Popov, Niels van Berkel, Zhanna Sarsenbayeva, Vassilis Kostakos, Simo Hosio, Scott Savage, Alexander Bykov, Igor Meglinski, and Denzil Ferreira. Assisted medication management in elderly care using miniaturised near-infrared spectroscopy. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.*, 2(2), Jul 2018. Best Paper Award (**CORE A\***)

🏆 Zhanna Sarsenbayeva. Situational impairments during mobile interaction. In *Proceedings of the 2018 ACM International Joint Conference and 2018 International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers*, UbiComp ’18, page 498503, New York, NY, USA, 2018. Association for Computing Machinery. Honourable Mention Award (Best Presentation)

Oludamilare Matthews, Zhanna Sarsenbayeva, Weiwei Jiang, Joshua Newn, Eduardo Velloso, Sarah Clinch, and Jorge Goncalves. Inferring the mood of a community from their walking speed: A preliminary study. In *Proceedings of the 2018 ACM International Joint Conference and 2018 International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers*, UbiComp ’18, page 11441149, New York, NY, USA, 2018. Association for Computing Machinery

Weiwei Jiang, Gabriele Marini, Niels van Berkel, Zhanna Sarsenbayeva, Chu Luo, Xin He, Tilman Dingler, Yoshihiro Kawahara, and Vassilis Kostakos. A mobile scanner for probing liquid samples in

everyday settings. In *Proceedings of the 2018 ACM International Joint Conference and 2018 International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers*, UbiComp '18, page 11721177, New York, NY, USA, 2018. Association for Computing Machinery

Aku Visuri, Kennedy Opoku Asare, Elina Kuosmanen, Yuuki Nishiyama, Denzil Ferreira, Zhanna Sarsenbayeva, Jorge Goncalves, Niels van Berkel, Greg Wadley, Vassilis Kostakos, Sarah Clinch, Oludamilare Matthews, Simon Harper, Amy Jenkins, Stephen Snow, and m. c. schraefel. Ubiquitous mobile sensing: Behaviour, mood, and environment. In *Proceedings of the 2018 ACM International Joint Conference and 2018 International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers*, UbiComp '18, page 11401143, New York, NY, USA, 2018. Association for Computing Machinery

Sven Mayer, Lars Lischke, Jens Emil Grønbæk, Zhanna Sarsenbayeva, Jonas Vogelsang, Paweł W. Woźniak, Niels Henze, and Giulio Jacucci. Pac-many: Movement behavior when playing collaborative and competitive games on large displays. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, CHI '18, page 110, New York, NY, USA, 2018. Association for Computing Machinery (**CORE A\***)

## 2017

🏆 Zhanna Sarsenbayeva, Niels van Berkel, Chu Luo, Vassilis Kostakos, and Jorge Goncalves. Challenges of situational impairments during interaction with mobile devices. In *Proceedings of the 29th Australian Conference on Computer-Human Interaction*, pages 477–481, 2017

Zhanna Sarsenbayeva, Niels van Berkel, Aku Visuri, Sirkka Rissanen, Hannu Rintamaki, Vassilis Kostakos, and Jorge Goncalves. Sensing cold-induced situational impairments in mobile interaction using battery temperature. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.*, 1(3), sep 2017 (**CORE A\***)

Zhanna Sarsenbayeva, Denzil Ferreira, Niels van Berkel, Chu Luo, Mikko Vaisanen, Vassilis Kostakos, and Jorge Goncalves. Vision-based happiness inference: A feasibility case-study. In *Proceedings of the 2017 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2017 ACM International Symposium on Wearable Computers*, UbiComp '17, page 494499, New York, NY, USA, 2017. Association for Computing Machinery

Aku Visuri, Zhanna Sarsenbayeva, Niels van Berkel, Jorge Goncalves, Reza Rawassizadeh, Vassilis Kostakos, and Denzil Ferreira. Quantifying sources and types of smartwatch usage sessions. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*, CHI '17, page 35693581, New York, NY, USA, 2017. Association for Computing Machinery (**CORE A\***)

Jorge Goncalves, Zhanna Sarsenbayeva, Niels van Berkel, Chu Luo, Simo Hosio, Sirkka Risanen, Hannu Rintamki, and Vassilis Kostakos. Tapping Task Performance on Smartphones in Cold Temperature. *Interacting with Computers*, 29(3):355–367, 10 2016 (**IF: 1.036**)

## 2016

Zhanna Sarsenbayeva, Jorge Goncalves, Juan García, Simon Klakegg, Sirkka Rissanen, Hannu Rintamäki, Jari Hannu, and Vassilis Kostakos. Situational impairments to mobile interaction in cold environments. In *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing*, UbiComp '16, page 8596, New York, NY, USA, 2016. Association for Computing Machinery (**CORE A\***)

Aku Visuri, Zhanna Sarsenbayeva, Jorge Goncalves, Evangelos Karapanos, and Simon Jones. Impact of mood changes on application selection. In *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct*, UbiComp '16, page 535540, New York, NY, USA, 2016. Association for Computing Machinery