

Hasti Seifi

Universitetsparken 1, 2100 Copenhagen, Denmark
hs@di.ku.dk ◊ +4531820876
hastiseifi.com

RESEARCH INTERESTS

Haptics, Human-Computer Interaction, Social Robotics, Information Visualization.

My research objective is to create meaningful touch interactions between humans and technology and empower users to adapt these touch experiences for their goals and preferences.

RESEARCH POSITIONS

- 2020- **University of Copenhagen (KU)**, Tenure-Track Assistant Professor, Copenhagen, Denmark
- 2017-2020 **Max Planck Institute for Intelligent Systems**, Postdoctoral Researcher, Stuttgart, Germany
- 2011-2017 **University of British Columbia**, Graduate Researcher, Vancouver, Canada
- Summer 2015 **Technicolor Research USA Inc.**, Research Intern, San Francisco Bay Area, USA
- 2009-2010 **Modelling of Complex Social Systems (SFU IRMACS)**, Graduate Researcher, Burnaby, Canada
- 2008-2010 **Simon Fraser University**, Graduate Researcher, Surrey, Canada
- Spring 2008 **University of Tehran**, Undergraduate Researcher, Surrey, Canada

EDUCATION

- 2011-2017 **University of British Columbia (UBC)**, Ph.D. in Computer Science.
 - Thesis: Personalizing Haptics - From Individuals' Sense-Making Schemas to End-User Haptic Tools
 - Supervisor: Karon E. MacLean
 - Graduation date: 30.05.2017
- 2008-2010 **Simon Fraser University (SFU)**, M.Sc. in Interactive Arts and Technology.
 - Thesis: Emotion Depiction: Expressive Character Sequences Using Painterly Rendering
 - Supervisor: Steve DiPaola
 - Graduation date: 10.12.2010
- 2003-2008 **University of Tehran**, B.E. in Computer and Information Technology Engineering.
 - Thesis: A Comparison of Routing Algorithms for Optical Packet Switching Networks
 - Supervisor: Ahmad Khonsari
 - Graduation date: 15.06.2008

AWARDS AND RECOGNITION

- 2018 – 2020 NSERC Postdoctoral Fellowship – National – \$45000/Year – granted to a core of highly qualified Canadian researchers with leading edge scientific and research skills at a pivotal time in their careers.
- 2020 Delft Technology Fellowship – TU Delft – 100,000 € – Declined – The fellowship offers high-profile, tenure-track positions with 100K additional startup funding to outstanding female researchers to join Delft University of Technology and establish their own research program of international repute.
- 2018 Eurohaptics Best PhD Thesis Award (best doctoral thesis in the field of haptics) – International – 1000€ prize granted by the Eurohaptics Society during the 2018 Eurohaptics Conference, Pisa, Italy.
- 2017 Maria Klawe Endowment Award – UBC – Women in Science Activities
- 2015 Department Service Award – UBC – Computer Science
- 2015 Best Demo Finalist – IEEE Haptics Symposium 2015 and Eurohaptics 2020
- 2011 – 2015 Four Year PhD Fellowship – UBC – \$26000/Year – aims to attract best Canadian and international PhD students and fund them for up to four years of their doctoral studies.
- 2010 SFU IRMACS Graduate Scholarship – SFU – \$3000

2008 – 2010 Erasmus Mundus Scholarship – CIMET M.Sc. Program – 42000 €/Year – Declined
2007 Ranked seventh in M.Sc. National Entrance Exam in Iran

PUBLICATIONS

Link to Google Scholar Page: <https://goo.gl/GVGJFF>

Journal Papers

- [1] A. Block, **H. Seifi**, O. Hilliges, R. Gassert, and K. J. Kuchenbecker, “In the Arms of a Robot: Designing Autonomous Hugging Robots with Intra-Hug Gestures”, *ACM Transactions on Human Robot Interaction (THRI)* - in review.
- [2] R. Burns, **H. Seifi**, H. Lee, and K. J. Kuchenbecker, “Getting in Touch With Autistic Children: Specialist Guidelines for a Touch-Perceiving Robot”, *Paladyn Journal of Behavioral Robotics, Special issue on Robots and Autism (Paladyn)*, vol 12, no. 1, pp. 115-135, 2020.
- [3] **H. Seifi**, M. Chun, C. Gallacher, O. Schneider, and K. E. Maclean, “How Do Novice Hapticians Design? A Case Study in Creating Haptic Learning Environments”, *IEEE Transactions on Haptics (ToH)*, vol. 13, no. 4, pp. 791-805, 2020.
- [4] **H. Seifi**, M. Chun, and K. E. Maclean, “Toward Affective Handles for Tuning Vibrations”, *ACM Transactions on Applied Perception (TAP)*, vol. 15, no. 3, pp. 22:1–22:23, 2018.
- [5] **H. Seifi**, and K. E. MacLean, “Exploiting Haptic Facets: Users’ Sensemaking Schemas as a Path to Design and Personalization of Experience”, *International Journal of Human Computer Studies (IJHCS)*, Special issue on Multisensory HCI, pp. 38–61, 2017.
- [6] **H. Seifi**, S. DiPaola, and A. Arya, “Expressive Animated Character Sequences Using Knowledge-Based Painterly Rendering”, *International Journal of Computer Games Technology (IJCGT)*, vol. 2011, 2011.
- [7] V. Spicer, A. A. Reid, J. Ginther, **H. Seifi**, and V. Dabbaghian, “Bars on Blocks: A Cellular Automata Model of Crime and Liquor Licensed Establishment Density”, *Computers, Environment and Urban Systems*, vol. 36, no. 5, pp. 412–422, 2012.

Book

- [1] **H. Seifi**, “Personalizing Haptics: From Individuals’ Sense-Making Schemas to End-User Haptic Tools”, *Springer Series on Touch and Haptic Systems*, Springer International Publishing, 2019.

Book Chapter

- [1] K. E. MacLean, O. Schneider, and **H. Seifi**, “Multisensory Haptic interactions: Understanding the Sense and Designing for it”, in *Handbook of Multimodal-Multisensor Interfaces*, vol. 1, S. Oviatt, B. Schuller, P. Cohen, and A. Krueger, Eds.: ACM Books, Morgan Claypool, pp. 97–142, 2017.

Peer-Reviewed Conference Papers

- [1] M. Di Luca, **H. Seifi**, S. Egan, M. Gonzalez-Franco, “Locomotion Vault: the Extra Mile in Analyzing VR Locomotion Techniques”, in *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, 2021.
- [2] R. Burns, **H. Seifi**, H. Lee, K. J. Kuchenbecker, “A Haptic Empathetic Robot Animal for Children with Autism”, in *Proceedings of the Companion of the 2021 ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, 2021.
- [3] **H. Seifi**, M. Oppermann, J. Bullard, K. E. MacLean, and K. J. Kuchenbecker, “Capturing Experts’ Mental Models to Organize a Collection of Haptic Devices: Affordances Outweigh Attributes”, in *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, pp. 1–12, 2020.
- [4] **H. Seifi**, F., Fazlollahi, M. Oppermann, J. Sastrillo, J. Ip, A. Agrawal, G. Park, K. J. Kuchenbecker, and K. E. MacLean, “Haptipedia: Accelerating Haptic Device Discovery to Support Interaction and Engineering Design”, in *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)* pp. 558:1–558:12, 2019.
- [5] S. Ebrahimi Takalloo, **H. Seifi**, and J.D.W. Madden, “Design of Ultra-Thin High Frequency Trilayer Conducting Polymer Micro-actuators for Tactile Feedback Interfaces”, *Electroactive Polymer Actuators and Devices (EAPAD)*, p. 1016312, 2017.
- [6] **H. Seifi**, and K. Lyons, “Exploring the Design Space of Touch-based Vibrotactile Interactions for Smartwatches”, in *Proceedings of the 20th International Symposium on Wearable Computers (ISWC)*, pp. 156–165, 2016.

- [7] O. Schneider, **H. Seifi**, S. Kashani, M. Chun, and K.E. MacLean, “HapTurk: Crowdsourcing Affective Ratings of Vibrotactile Icons”, in *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, pp. 3248–3260, 2016.
- [8] **H. Seifi**, K. Zhang, and K. E. MacLean, “VibViz: Organizing, visualizing and navigating vibration libraries”, in *Proceedings of IEEE World Haptics Conference (WHC)*, pp. 254–259, 2015.
- [9] **H. Seifi**, C. Anthropillai, and K. E. MacLean, “End-user Customization of Affective Tactile Messages: A Qualitative Examination of Tool Parameters”, in *Proceedings of IEEE Haptics Symposium (HAPTICS)*, pp. 251–256, 2014.
- [10] **H. Seifi**, H. Halbert, and J. McGrenere, “Supervisor-Student Research Meetings: A Case Study on Choice of Tools and Practices in Computer Science”, in *Proceedings of Graphics Interface (GI)*, pp. 129–135, 2014.
- [11] **H. Seifi**, and K. E. MacLean, “A First Look at Individuals’ Affective Rating of Vibrations”, in *Proceedings of IEEE World Haptics Conference (WHC)*, pp. 605–610, 2013.
- [12] **H. Seifi**, S. DiPaola, and J. T. Enns, “Exploring the Effect of Color Palette in Painterly Rendered Character Sequences”, in *Proceedings of the Eighth Annual Symposium on Computational Aesthetics in Graphics, Visualization, and Imaging (CAe or Expressive)*, pp. 89–97, 2012.
- [13] M. Erfani Joorabchi, A. Dalvandi, **H. Seifi**, L. Bartram, and C. D. Shaw, “Visualizing Search Results: Evaluating an Iconic Visualization”, in *Proceedings of SPIE 7530, Visualization and Data Analysis*, p. 75300G, 2010.

Workshops, Posters and Demos

- [1] **H. Seifi**, D. Gueorguiev, H. Elbaggari, and M. Melnyk. “An interactive Teaching Module On Force-Feedback Haptic Devices”, in *Eurohaptics (EH)*, 2020 (Hands-on Demonstration).
- [2] R. Burns, **H. Seifi**, H. Lee, and K. J. Kuchenbecker, “A Haptic Empathetic Robot Animal for Children with Autism”, *Human-Robot Interaction Pioneers Workshop (HRI Pioneers)*, 2021 (Workshop Paper).
- [3] R. B. Burns, H. Lee, **H. Seifi**, and K. J. Kuchenbecker, “Utilizing Interviews and Thematic Analysis to Uncover Specifications for a Companion Robot”, International Conference on Social Robotics (ICSR), Workshop on Enriching HRI Research with Qualitative Methods, 2020 (Workshop Paper).
- [4] R. B. Burns, H. Lee, **H. Seifi**, and K. J. Kuchenbecker, “An Improved Tactile Sensing System for Detecting Social Touch”, submitted to IEEE Haptics Symposium (HAPTICS), 2020 (Work in Progress).
- [5] **H. Seifi**, J. Cho, D. Hiller, T. A. Blinman, and K. J. Kuchenbecker, “Assessing Surgical Tool Motion in Laparoscopic Training”, in *Intel Network of Intelligent Systems Workshop*, 2019 (Poster).
- [6] **H. Seifi**, J. Ip, A. Agrawal, K. J. Kuchenbecker, and K. E. MacLean, “Toward Expert-sourcing of a Haptic Device Repository”, in *ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, 2019 (Workshop Paper).
- [7] **H. Seifi**, K. E. MacLean, K. J. Kuchenbecker, and G. Park, “Haptipedia: An Expert-Sourced Interactive Device Visualization for Haptic Designers”, in *IEEE Haptics Symposium (HAPTICS)*, 2018 (Work in Progress).
- [8] **H. Seifi**, F. Fazlollahi, G. Park, K.J. Kuchenbecker, and K.E. MacLean, “Haptipedia: Exploring Haptic Device Design through Interactive Visualizations”, in *Eurohaptics*, 2018 (Hands-on Demonstration).
- [9] P. Bucci, L. Cang, M. Chun, D. Marino, O. Schneider, **H. Seifi**, and K.E. MacLean. “CuddleBits: an Iterative Prototyping Platform for Complex Haptic Display”, in *Eurohaptics*, 2016 (Hands-on Demonstration).
- [10] **H. Seifi**, K. Zhang, and K. E. MacLean. “VibViz: an Interactive Visualization for Organizing and Navigating a Vibrotactile Library”, in *IEEE World Haptics Conference (WHC)*, 2015 (Hands-on Demonstration).
- [11] **H. Seifi**, Ch. Anthropillai, and K. E. MacLean. “End-User Vibration Customization Tools: Parameters and Examples”, in *IEEE Haptics Symposium (HAPTICS)*, 2014 (Hands-on Demonstration).
- [12] **H. Seifi**, S. DiPaola, J. T. Enns, and T. Chu, “Enhancing Emotions in Animated Character Sequences Using Painterly Rendering: the Effect of Color Palette”, in *CRA-W Grad Cohort Program*, 2011 (Poster).

PATENTS

- [1] S. Hamidi-Rad, S. S. Bhamidipati, B. C. Eriksson, C. H. Lim, **H. Seifi**, U. Oswal, A. Natarajan, and P. Syminelakis. “Personalized Presentation Enhancement Using Augmented Reality.” United States patent 10,834,454, issued on November 10, 2020.
- [2] K. Lyons, and **H. Seifi**, “Vibrotactile Interaction With Touch-Based User Devices”, United States patent 16,063,882, issued on December 27, 2018.
- [3] U. Oswal, B. Eriksson, C. H. Lim, **H. Seifi**, S. S. Bhamidipati, S. Hamidi-Rad, A. Natarajan, and P. Syminelakis, “Method and Apparatus for Displaying Content in Augmented Reality Settings”, United States patent 16,063,282, issued on December 27, 2018.

- [4] U. Oswal, B. Eriksson, C. H. Lim, **H. Seifi**, S. S. Bhamidipati, S. Hamidi-Rad, A. Natarajan, and P. Syminelakis, “Method and Apparatus for Remote Parental Control of Content Viewing in Augmented Reality Settings”, United States patent 16,063,285, issued on December 12, 2018.
- [5] S. Hamidi-Rad, S. S. Bhamidipati, B. Eriksson, C. H. Lim, **H. Seifi**, U. Oswal, A. Natarajan, and P. Syminelakis, “Personalized Presentation Enhancement Using Augmented Reality”, United States patent 16,060,930, issued on December 20, 2018.

FUNDING AND GRANTS

- 2019-2020 **IEEE RAS CEMRA.**
 - o Principal Investigator: Hasti Seifi, Co-Principal Investigator: David Gueorguiev
 - o Title: A Hands-on Stand-alone Teaching Module on Force-feedback Haptic Devices
 - o Funding: \$9,209
 - o IEEE Robotics and Automation Society
- 2018-2020 **NSERC Postdoctoral Fellowship.**
 - o Award Holder: Hasti Seifi
 - o Title: Making Haptics Accessible
 - o Funding: \$90K
 - o Natural Sciences and Engineering Research Council of Canada
- 2010-2011 **NSERC Engage.**
 - o Principal Investigator: Dr. Steve DiPaola, Senior Staff: Hasti Seifi
 - o Title: Emotional and Expression-Based Character Sequences Using Computer Painterly Rendering
 - o Funding: \$25K
 - o Natural Sciences and Engineering Research Council of Canada

INVITED TALKS

- 2020 **University of Massachusetts Amherst**, Amherst, USA
Delft University of Technology, Delft, The Netherlands
University of Illinois at Chicago, Chicago, USA
McMaster University, Hamilton, Canada
University of Delaware, Newark, USA
Dartmouth College, Dartmouth, USA
Florida State University, Tallahassee, USA
Santa Clara University, Santa Clara, USA
Emory University, Atlanta, USA
- 2019 **University of Copenhagen**, Copenhagen, Denmark
University of Manitoba, Winnipeg, Canada
University of Bath, Bath, UK
University of St. Andrews, SACHI Lab, St. Andrews, UK
University of Pennsylvania, GRASP lab, Philadelphia, USA
University of California, Merced, Merced, USA
University of Sydney, School of Computer Science, Sydney, Australia
University of Victoria, Computer Science, Victoria, Canada
Queen’s University, School of Computing, Kingston, Canada
Democratizing Haptics
- 2019 **Ecole Polytechnique Federale de Lausanne (EPFL)**, Lausanne, Switzerland
Supporting Novices in Learning About and Designing for Haptics
- 2019 **University of Stuttgart, Institute for Visualization and Interactive Systems**, Stuttgart, Germany
Haptics: Hardware, Algorithms, and Interactions
- 2018 **Eurohaptics Best PhD Thesis Talk**, Pisa, Italy
Personalizing Haptics: From Individuals’ Sense-Making Schemas to End-User Haptic Tools
- 2018 **Facebook Reality Labs**, Seattle, USA
Making Haptics Accessible
- 2016 **Samsung Canada**, Burnaby, Canada

Frontiers in Haptics: Personalization and Crowdsourcing

2016 **Simon Fraser University**, Vancouver, Canada
Supporting End-User Personalization of Vibrotactile Sensations

2015 **Technicolor Research**, Los Altos, USA
Exploring the Design Space for Eyes-free Haptic Interactions on Off-the-shelf Smartwatches

TEACHING EXPERIENCE

2021 **Instructor** – Project in Human-Centered Computing, University of Copenhagen

2014, 2016 **Planning and Coordination of Computer Science Teaching Assistant Training Workshops** – I planned, recruited facilitators for, and coordinated full and half day training workshops and gatherings for all teaching assistants in the Computer Science Department (200+ new TAs and over 400 returning TAs per year).

Teaching Assistant

Winter 2016 Advanced Methods for HCI, University of British Columbia

Fall 2010 Computational Media, Simon Fraser University

2009 – 2010 Multimedia Programming for Art and Design, Simon Fraser University

Fall 2008 Artificial Intelligence, Simon Fraser University

STUDENT SUPERVISION AND MENTORING

Jeong-Hyon Cho, Ph.D. Researcher (Summer 2019)

Towela Tembo, Undergraduate Researcher (Winter 2019 – Present)

Ashutosh Agrawal, Undergraduate Researcher (Summer 2018, Summer 2019)

Jessica Ip, NSERC USRA and Undergraduate Researcher (Summer 2018, Winter 2019)

John Sastrillo, NSERC USRA and Undergraduate Researcher (Summer 2018)

Edwin Zhu, Undergraduate Researcher (Winter 2018)

Dilorom Paradaeva, M.Sc. Researcher (Winter 2017)

Matthew Chun, Undergraduate Researcher (Summer 2015 – Winter 2017)

Salma Kashani, M.Sc. Researcher (Summer 2015)

Chamila Anthonypillai, Undergraduate Researcher (Summer 2013)

PROFESSIONAL ACTIVITIES

Associate Chair – ACM Conference on Human Factors in Computing Systems (CHI 2021)

Associate Editor – IEEE World Haptics Conference (WHC 2021)

Associate Chair – ACM Symposium on User Interface Software and Technology (UIST 2021)

Associate Chair – ACM International Conference on Mobile Human-Computer Interaction (MobileHCI 2021)

Web Chair – IEEE World Haptics Conference (WHC 2021)

Judge Panel Member – Eurohaptics Best PhD Thesis Award 2018, 2019

Program Committee Member – International Conference on Intelligent User Interfaces (IUI 2019)

Program Committee Member – International Workshop on Haptic and Audio Interaction Design (HAID 2019)

Work In Progress Editor – IEEE Haptics Symposium 2018, 2020 and IEEE World Haptics Conference 2019

Co-Organizer (with K. E. MacLean, and K. J. Kuchenbecker) of the workshop on “Haptipedia: An Interactive Database for Selecting, Ideating, and Learning about Grounded Force-Feedback Devices”, AsiaHaptics Conference, Incheon, South Korea, Nov. 2018

Reviewer for:

Journals: International Journal of Human Computer Interaction, Perception, IEEE Transactions on Haptics, IEEE Robotics and Automation Letters, IEEE Transactions on Visualization and Computer Graphics

Conferences: CHI, UIST, InfoVis, IUI, ICRA, IROS, Humanoids, Haptics Symposium, World Haptics Conference, and Eurohaptics

OUTREACH

2012, 2013 **Lead Coordinator for GIRLsmarts4tech** - I planned Computer Science workshops for Grade 6 and 7 girls in Greater Vancouver, recruited over 100 UBC volunteers, and reached out to 300+ middle school girls.

2005 – 2007 **Instructor of Basic Computer Skills** I volunteered to teach basic computer skills to a group of Afghan women for two years at Iranian Children's Rights, a non-profit organization in Tehran. The goal of the program was to increase these women's employability as they did not have the right to attend a school in Iran at the time.