Narges Pourjafarian

— Area of Research —

Human Computer Interaction (HCI), Fabrication, Embedded Systems, Wearable Computing, IoT, and Optimization

Contact

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home page

narges-pourjafarian

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Education

08.2018 – present
Saarland University, Germany, PhD
Human Computer Interaction
Thesis: Computational design and fabrication of customised sensors
Advisor: Prof. Dr. Jürgen Steimle

04.2015 – 09.2017
Saarland University, Germany, M.Sc.
Computer Science, final grade: 1.4 (very good, equivalent to GPA A)
Thesis: SkinPad: Design and fabrication of multi-touch sensor for on-skin interaction

09.2008 – 03.2011
Shiraz University, Iran, M.Sc.
Electrical Engineering – Control, GPA: 17.55 out of 20.0
Thesis: Evaluation and unification of a class of optimization algorithms

09.2001 – 06.2006
Shiraz University of Technology, Iran, B.Sc.
Electrical Engineering – Electronics
Thesis: Vehicles speed control with image processing

Experience

08.2018 – present
Saarland University, Germany
Research Associate and Doctoral Candidate
Area of expertise: HCI, embeded systems, fabrication, wearable and on-skin interfaces, hardware prototyping

08.2017 – 07.2018
Saarland University, Germany
Research Assistant at HCI lab Saarland
Area of expertise: embedded systems, wearable computing

08.2007 – 09.2015
Iranian Telecommunication Manufacturing Company (ITMC - formerly SIEMENS partner in Iran), Iran
Senior Research and Development Engineer
Cooperation in production of first national Base Transceiver Stations (BTS), Operation and maintenance of telecommunication switches

2010 – 2015
University of Applied Science and Technology, Iran
Lecturer
Courses: Linear control systems, Principles of GSM networks, Microprocessors, Pulse techniques

Academic Activities

2018–22
Teaching - Course organization and supervision
Interactive Touch Surfaces, 2022
Physical Computing, 2021
Human Computer Interaction, 2018/19

2019 – 22
Mentoring
2 Master and 1 Bachelor theses

2020
Workshop co-organiser
Designing Digital Touch: Social and Sensory Aspects and Challenges *(EuroHaptics 2020)*

2019–22
ACM CHI, EuroHaptics reviewer

2021
Student volunteer ACM CHI

2019 – 22
Contribution to open source community
Projects: Multi-touch Kit, Sketching On-Body, Print-A-Sketch

Skills

Programming languages
Java, C, C++, C#, HTML

Tools
MATLAB, Eclipse, NetBeans, MS Visual Studio, IntelliJ, Unity, Processing, PSpice

Hardware
Programming with MicroControllers (Arduino, AVR, ESP, Teensy, RedBear, etc), Raspberry Pi, Programmable logic controller (PLC)

Fabrication
Laser Cutting, Screen Printing, Conductive ink-jet printing, Vinyl Cutting, 3D printing, Silicone Casting, Soft Electronic Circuits with Printed Electronics

Design
2D Content creation (Adobe Illustrator, Photoshop, Powerpoint), 3D modelling (Blender), Video production (Adobe Premiere Pro)

Materials
Conductors (Metallic and Polymeric), Electroactive polymer (EAP), Stretchable Substrates (PDMS, TPU)

Selected Press Coverage

Arduino, Rapidly create your own capacitive multi-touch sensors with this kit

Hackaday, Arduino does multitouch

Hackster, Capacitive multi-touch sensor prototyping techniques

Engadget, Multi-Touch ‘skin” makes your body the controller

Phys.org, Sensor stickers transform the human body into a multi-touch surface

New Atlas, Multi-Touch Skin turns peoples’ bodies into remote control units

ACM Tech News, Sensor stickers transform the human body into a multi-touch surface

Vodafone, Multi-Touch Skin: A sensor sticker turns your body into a touch screen

Publication

Book

2014 Ali Akbar Safavi, Narjes Pourjafarian, and Ali Safavi. *Optimization Based on Meta-Heuristic Algorithms*. Pejoheshgaran Nashr Daneshgahi, 2014. In Persian

Journal Articles

2021 Carey Jewitt, Sara Price, Jürgen Steimle, Gijs Huisman, Lili Golmohammadi, Narges Pourjafarian, William Frier, Thomas Howard, Sima Ipakchian Askar, Michela Ornati, Sabrina Panëels, and Judith Weda. Manifesto for digital social touch in crisis. *Frontiers in Computer Science*, 3:97, 2021

2015 Mehran Yazdi, Narjes Pourjafarian, Mehrnaz Fani, and Elahe Taherianfard. A new rstb invariant image template matching based on log-spectrum and modified ica. *Journal of Advances in Computer Engineering and Technology*, 1(1):19–28, 2015

2011 Taher Niknam, Elahe Taherian Fard, Narges Pourjafarian, and Alireza Rousta. An efficient hybrid algorithm based on modified imperialist competitive algorithm and K-means for data clustering. *Engineering Applications of Artificial Intelligence*, 24(2):306 – 317, 2011

Conference Papers

2021 Narjes Pourjafarian, Marion Koelle, Bruno Fruchard, Sahar Mavali, Konstantin Klamka, Daniel Groeger, Paul Strohmeier, and Jürgen Steimle. Bodystylus: Freehand on-body design and fabrication of epidermal interfaces. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, CHI '21, pages 1087–1098, New York, NY, USA, 2021. ACM

2021 Narjes Pourjafarian and Paul Strohmeier. Polymerized tape. In *Proceedings of the Fifteenth International Conference on Tangible, Embedded, and Embodied Interaction*, TEI '21, New York, NY, USA, 2021. Association for Computing Machinery

2020 Paul Strohmeier, Narjes Pourjafarian, Marion Koelle, Cedric Honnet, Bruno Fruchard, and Jürgen Steimle. Sketching on-body interactions using piezo-resistive kinesiology tape. In *Proceedings of Annual ACM Symposium on Augmented Humans conference*, AHs '20, 2020

2019 Narjes Pourjafarian, Anusha Withana, Joseph A. Paradiso, and Jürgen Steimle. Multi-touch kit: A do-it-yourself technique for capacitive multi-touch sensing using a commodity microcontroller. In *Proceedings of the 32Nd Annual ACM Symposium on User Interface Software and Technology*, UIST '19, pages 1071–1083, New York, NY, USA, 2019. ACM

2018 Aditya Shekhar Nittala, Anusha Withana, Narjes Pourjafarian, and Jürgen Steimle. Multi-touch skin: A thin and flexible multi-touch sensor for on-skin input. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, CHI '18, pages 33:1–33:12, New York, NY, USA, 2018. ACM

2014 Reyhane Mokhtarname, Narjes Pourjafarian, Akbar Rahideh, and Ali Akbar Safavi. Application of wave-net based modified imperialist competitive algorithm in trms system modeling. In *The 22nd Iranian Conference on Electrical Engineering (ICEE)*, 2014. In persian

Publication

2010 Mehrnaz Fani, Narges Pourjafarian, Elahe Taherian Fard, and Mehran Yazdi. Log-spectrum based RSTB invariant template matching with modified ICA. In *5th International Symposium on Telecommunications (IST)*, pages 787–792, Dec 2010

2010 Narjes Pourjafarian and Ali Akbar Safavi. Application of imperialist competitive algorithm in e-commerce negotiation. In *5th international conference on e-commerce in developing countries with focus on export (ECDC)*, pages 61–70, 2010