Ata Otaran

Postdoctoral Researcher in Saarland University, Saarbrücken

Forscher im Bereich der physischen Mensch-Roboter-Interaktion. Fundierte Kenntnisse in kinematischer und dynamischer Modellierung, Kontrolltheorie, haptischer Interaktion und virtueller Realität (VR). Erfahrung in der Durchführung psycho-physischer Studien.

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EDUCATION

Ph.D. in Computer Science

Queen Mary University of London
2017 – 2022

- Thesis: Ankle-Actuated Human-Machine Interface for Walking in Virtual Reality.
  Advisor: Dr. Ildar Farkhatdinov

M.Sc. in Mechatronics

Sabanci University, Istanbul
2015 – 2017

- GPA: 3.90
  (equivalent to 1.10 in Germany)
- Thesis: Design and Control of Series Elastic Actuated Educational Devices.
  Advisor: Prof. Volkan Patoglu

B.Sc. in Mechatronics with Minors in Mathematics

Sabanci University, Istanbul
2011 – 2015

- GPA: 3.58
  (equivalent to 1.42 in Germany)
- Thesis: Design and Control of a Ballbot.
  Advisor: Prof. Volkan Patoglu

EXPERIENCE

Postdoctoral researcher at HCI Group in Saarland University, Saarbrücken

February 2022- October 2024

- Supervision of two thesis projects and five project-based seminar groups
- Teaching Assistant at HCI Course for Winter semesters of ’22 and ’23: Organization of 200 student courses for two semesters including tutorials, homeworks and exams

Part-time non-teaching work during PhD degree

- Developer for a virtual 3D laboratory learning environment for biomechanics courses at QMUL as a part of Humanoid project
  July-December 2021
- Research assistant for developing a VR locomotion interface
  May-July 2021
- Research assistant in NCNR Project on user interfaces for robot teleoperation
  2019 and 2021

Teaching assistance on MSc and BSc level courses for 12 semesters

2015 - 2021

- Topics included linear algebra, robotics, computer-aided design and Python programming

TUBITAK (Scientific and Technological Research Council of Turkey) funded project member

September ’15 - June ’17

- Implementation of a SEA for a gait rehabilitation robot
- Design and construction of a two wheeled inherently unstable telepresence device

Undergraduate teaching assistant in the Academic Support Program

2011 - 2015

- Peer Discussion Session Moderator (Fall ’11-Spring ’12)
- Summer School ASP General Coordinator (Summer ’12)
- Peer Assistant (Fall ’12 - Spring ’15)

AWARDS AND FUNDINGS

Received a XR4ALL European Commission funding (10K£) for commercialization of VR locomotion interface design

March ’21

Awarded full scholarhip and stipend during Masters and PhD degree studies

2015 - 2021

Placed in first 0.2% nationwide in both High School and University entrance exams.

2006 & 2011

ACADEMIC PRESENTATIONS (FIRST AUTHOR)

Demos
- WorldHaptics'19
- CRAS'18
- Eurohaptics'18
- Eurohaptics'16

Conference Paper
- Humanoids'20
- Taros'19*
- CRAS'18
- Eurohaptics'18
- Eurohaptics'16

Workshop
- WorldHaptics'19
- IEEEVR'21
- ICRA'21

Poster
- UKI-RAS'18(3^{rd} place)
- IROS'15
- WorldHaptics'21

Journal Paper
- IEEE TCGV
- IEEE TOH (Short)

* Best Student Paper Award

SKILLS

Programming
- MATLAB & Simulink
- C++ & C#
- Python

Design softwares
- Solidworks, Inventor
- Blender
- Unity

Embedded controllers
- TI C2000 series
- BeagleBone
- Arduino

Data acquisition devices
- NI-DAQ
- Quanser
- dSPACE

LANGUAGES

German
Upper Intermediate (B2)

English
Fluent

Turkish
Mother tongue

PUBLICATIONS

- (Forthcoming) Otaran A., Jiang Y., & Steimle, J., "Sparsely actuated modular metamaterials for shape-changing interfaces", International Conference on Tangible, Embedded, and Embodied Interaction (TEI), 2025
- Otaran, A., Farkhatdinov, I. Exploring User Preferences for Walking in Virtual Reality Interfaces Through an Online Questionnaire. Human Computer Interaction International (HCII), 2024
- Artin Saberpour Abadian, Ata Otaran, Martin Schmitz, Marie Muehlhaus, Rishabh Dabral, Diogo Luvizon, Azumi Maekawa, Masahiko Inami, Christian Theobalt, and Jürgen Steimle. 2023. Computational Design of Personalized Wearable Robotic Limbs. In Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology (UIST '23).
- Otaran A. and Farkhatdinov I., "Haptic Ankle Platform for Interactive Walking in Virtual Reality," in IEEE Transactions on Visualization and Computer Graphics (TVCG), 2021
- Otaran A. and Farkhatdinov I., "Walking-in-Place Foot Interface for Locomotion Control and Telepresence of Humanoid Robots," 2020 IEEE-RAS 20th International Conference on Humanoid Robots (Humanoids), 2021, pp. 453-458
- Otaran, A., Tokatli, O., & Patoglu, V. (2021). Physical Human-Robot Interaction Using HandsOn-SEA: An Educational Robotic Platform with Series Elastic Actuation. IEEE Transactions on Haptics (TOH).
- Otaran, A., & Farkhatdinov, I. (2021, March). A Short Description of an Ankle-Actuated Seated VR Locomotion Interface. In 2021 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW) (pp. 64-66). IEEE.
- Otaran, A., & Farkhatdinov, I. (2019, July). Modeling and Control of Ankle Actuation Platform for Human-Robot Interaction. In Annual Conference Towards Autonomous Robotic Systems (pp. 338-348). Springer, Cham.
- Caliskan, U., Apaydin, A., Otaran, A., & Patoglu, V. (2018, October). A series elastic brake pedal to preserve conventional pedal feel under regenerative braking. In 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) (pp. 1367-1373). IEEE.
- Otaran, A., Tokatli, O., & Patoglu, V. (2018, June). HandsOn-Computing: Promoting Algorithmic Thinking Through Haptic Educational Robots. In International Conference on Human Haptic Sensing and Touch Enabled Computer Applications (pp. 564-574). Springer, Cham.
- Otaran, A. (2017). Design, control and evaluation of educational devices with series elastic actuation (MSc dissertation).
- A Otaran , O Tokatli and V Patoglu, "Hands-On Learning with a Series Elastic Educational Robot", in the Proceedings of the EuroHaptics as Lecture Notes in Computer Science, 2016.

REFERENCES

Prof. Jürgen Steimle, Postdoctoral Research Supervisor

Professor at Saarland University steimle@cs.uni-saarland.de +447473101459

Dr. Ildar Farkhatdinov, PhD Degree Supervisor

Lecturer at Queen Mary University of London i.farkhatdinov@qmul.ac.uk +447473101459

Dr. Ozan Tokatli, Project Collaborator

Research Engineer at United Kingdom Atomic Energy Authority (UKAEA) Culham ozan.tokatli@gmail.com +447403551064