nira Yadollahi POSTDOCTORAL RESEARCH FELLOW · ROBOTICS

KTH. Stockholm. Sweden

🖀 www.elmirayadollahi.com | 🛅 elmirayadollahi | 🎓 ElmiraYadollahi

Elmira Yadollahi received a Ph.D. in Robotics, Brain, and Cognition from École polytechnique fédérale de Lausanne (EPFL), Switzerland and University of Lisbon, Portugal, 2021. She is currently a postdoctoral research fellow at the division of RPL at KTH Royal institute of Technology. Her multidisciplinary research tackles the intersection of robotics, computer science and developmental psychology (i.e., human-robot interaction), and it is particularly focused on developing more explainable and transparent robots and AI.

Research Experience

Robotics, Perception, and Learning (RPL) 🕥, KTH Royal institute of Technology

POSTDOCTORAL RESEARCH FELLOW

• My current plans include expanding my doctoral research into developing prosocial behaviours in robots and utilizing robots to foster prosocial behaviours in children and adults. This also expands to studying the social and ethical implications of developing transparent behaviours and explainability in social robots and agents. I am working in Social Robotics group supervised by Prof. Iolanda Leite.

Artificial Intelligence for People and Society (GAIPS) 🚱 , INESC-ID

DOCTORAL ASSISTANT

• My research was focused on generating a decision-making model of perspective-taking that helps robots to make informed decisions while collaborating with children. It is carried out under supervision of Prof. Ana Paiva and guidance of Dr. Marta Couto.

Computer-Human Interaction In Learning Laboratory (CHILI) 🔾, EPFL

DOCTORAL ASSISTANT

• Worked on developing the CoReader platform for using robot in educational scenarios with children. Research was carried out with supervision of Prof. Pierre Dillenbourg and guidance of Prof. Wafa Johal.

TeleRobotics and Control Laboratory (TCL Lab), KAIST

Post Graduate Researcher

• Started my research in human-robot interaction projects with supervision of Prof. Kwon Dong Soo by developing interaction modalities using sound source localization and visual inputs for robots while incorporating Kinect as an external input.

Acoustics Lab | Noise and Vibration Center (NoViC), KAIST

GRADUATE RESEARCHER

• Worked with prof. Jeong-Guon Ih, on projects related to acoustics and sound source localization.

Education

Ph.D. in Robotics, Brain and Cognition

INSTITUTO SUPERIOR TÉCNICO (IST), UNIVERSITY OF LISBON

École Polytechnique Fédérale de Lausanne (EPFL)

- The doctoral program RBCog Robotics, Brain and Cognition was funded by the Portuguese Foundation for
- Science and Technology (FCT) PD/BD/135150/2017. The IST EPFL track grants a Joint degree from EPFL and IST.
- Thesis: Exploring Spatial Perspective Taking in Human-Robot Interaction
- Under supervision of Prof. Ana Paiva and Prof. Pierre Dillenbourg with research carried out in GAIPS and CHILI Laboratories.
- In EPFL the degree was carried out in Robotics, Control and Intelligent Systems (EDRS) department. | GPA: 5.75 out of 6
- In IST the degree was carried out in Information Systems and Computer Engineering (DEIC) department. | GPA: 18 out of 20

M.Sc. in Mechanical Engineering

KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY (KAIST)

- Degree Recieved in Mechanical Engineering with focus on Acoustics, Noise, and Vibration.
- Thesis: Acoustic Localization of Small Leak Holes in Long Pipeline
- Under Supervision of Porf. Ih Jeoung Gong | GPA: 3.75 out of 4.3

B.Sc. in Mechanical Engineering

SHARIF UNIVERSITY OF TECHNOLOGY

- Thesis: Design of Knee Exoskeleton Mechanism to Assist Walking
- Under supervision of Prof. Hassan Zohoor | GPA: 15.27 out of 20

Lisbon, Portugal & Lausanne, Switzerland Nov. 2016 - Oct. 2021

> Tehran, Iran Sep. 2007 - Aug. 2011

Daejeon, South Korea

Sep. 2012 - Feb. 2015

Feb. 2017 - Oct. 2021

Stockholm, Sweden

Oct. 2021 - Present

Lisbon, Portugal

Jun. 2018 - Sep. 2021

Lausanne, Switzerland Nov. 2016 - May 2018

Daejeon, South Korea

Apr. 2015 - Feb. 2016

Daejeon, South Korea

Sep. 2012 - Feb. 2015





Work Experience

| Artificial Intelligence for People and Society (GAIPS) LAB MANAGER PART TIME • Managing the servers, robots, equipment purchases, and general organizations. | Lisbon, Portugal Feb. 2020 - Sep. 2021 |
|---|---|
| SM Instruments Inc. | Daejeon, South Korea |
| Promoting Sound Camera with our US partner National Instruments Corporation. Example video tutorial created by me . | Feb. 2016 - Oct. 2016 |
| English and Second Language Tutor TUTOR FREELANCE • English one to one tutoring to children between 6-9 years old. | Daejeon, South Korea Nov. 2014 - Sep. 2016 |
| Scania Bus Assembly Plant, Iran R & D ENGINEER INTERN • Research and development on the endurance of the bodies designed and produced for the Scania chassis. | Semnan, Iran Jun. 2010 - Sep. 2010 |

Teaching Experience

Social Robotics

KTH ROYAL INSTITUTE OF TECHNOLOGY

Course responsible was Prof. Iolanda Leite, the teaching team included Dr. Katie Winkle, Dr. Ilaria Torre, Dr. Arzu Guneysu Ozgur, and Dr. Elmira Yadollahi

Social Robotics and Human-Robot Interaction

Instituto Superior Técnico (IST), University of Lisbon

- The theoretical classes were taught by Prof. Rui Prada with me teaching the practical classes.
- As the only TA, my responsibilities included creating material, teaching the practical classes in workshop format, guide the students in developing their projects, and grading the projects. The workshops were organized on the following topics: Workshops on *Design of Social Robots*, *Technical Development, Experimental Design*, and *Statistical Analyses*.

Introduction to Visual Informatics

École Polytechnique Fédérale de Lausanne (EPFL)

- The course was taught by Prof. Pierre Dillenbourg.
- As part of the TAs team, my tasks included preparing the homework and moderating the practical classes using Blender, and grading.

Programming C

École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

- The course was taught by Prof. Ronan Boulic.
- As part of the TAs team, my tasks included preparing the homework, guiding the students in programming, designing the exams, and grading.

Projects

Toward Perspective-Aware Machine Decision Making

Personal Research

- The ultimate goal of this research is to develop a model that contribute to the machines with perspective-aware cognition
- Currently, I am supervising two master students who are researching different aspects of this topics.

WP6- Social AI: Learning and Reasoning in Social Contexts ⊿

EU Horizon 2020 Research and Innovation Programme GA No 952215

• TAILOR is an ICT-48 Network of AI Research Excellence Centers funded by EU Horizon 2020. This work package will establish a roadmap in this field drawing new directions for research exploring new avenues for social AI focusing on its foundations techniques and algorithms.

Ecosystem of Child-Robot Interaction

INTERNATIONAL COLLABORATION

• In collaboration with researchers from University of Washington in USA, University of Waterloo in Canada and INESC-ID in Portugal. This project aims at creating a clear picture of how ethics in Child-Robot Interaction by providing guidelines for researchers and other stakeholders .

An Extended Framework for Characterizing Robots in Movies

Collaboration within Portugal

• In collaboration with researchers from Instituto Universitário de Lisboa (ISCTE) in Portugal.

Sweden Nov. 2021 - Present

Stockholm, Sweden

Lisbon, Portugal

Lausanne, Switzerland

Spring 2017, Spring 2018

Lausanne, Switzerland

Fall 2021

Fall 2020

Fall 2017

Europe

Portugal, Canada, United States

Feb. 2020 - Present

Jan. 2021 - Present

Portugal Nov. 2020 - Present

An Extended Survey of Technical and Experimental Developments using Nao Robot

INTERNATIONAL COLLABORATION

• In collaboration with researchers from University of New South Wales in Australia and Nazarbayev University in Kazakhstan. The research provide insights into the deployment of Nao, the most sought-after social robot, and discuss the progress in its application across various domains.

Studying the Effect of Transparency in Interaction with Robots

COLLABORATION WITHIN IST

• In collaboration with the researchers from Instituto Superior Técnico and research published at ICSR 2020 receiving Best Student Paper Award.

CogPeT: Cognitive Model of Perspective Taking

PHD RESEARCH PROJECT

• As part of my doctoral research, the research aims at developing a Cognitive Model of Perspective Taking , including the use of NAO (partly published in AIED 2020 with presentation 📸) and Cozmo robots (partly published in IDC 2020 with presentation 📸) and virtual robotic agents.

Bringing Letters to Life: Handwriting with Haptic-Enabled Tangible Robots

COLLABORATION WITHIN EPFL

• as part of *Digital Learning and Analytic course* project and in collaboration with researchers from CHILI Lab at EPFL published in IDC 2018.

CoReader: Studying Joint Attention in a Reading Activity with a Learner Robot

PhD Research Project

• as part of my doctoral research, presented in my EPFL Candidacy Exam and published in IDC 2018 receiving Best Student Paper Award and Honorable Mention in Best Paper Award

Publications_

| 2022 | • E. Yadollahi, I. Leite "Addressing the Challenges of Developing Perspective Taking Abilities in Machines/Robots/AI" Under review. |
|--------|---|
| 2022 | • E. Yadollahi, M. Couto, P. Dillenbourg, A. Paiva "Do Children Adapt Their Perspective to a Robot When They Fail to Complete a Task?" Under review. |
| 2022 | • E. Yadollahi, M. Couto, P. Dillenbourg, A. Paiva "The Effect of Playing Games with Robots on Children's Spatial Perspective Taking Abilities?" Under review. |
| 2021 🚳 | • Yadollahi, E. (2021). Exploring Spatial Perspective Taking in Human-Robot Interaction (No. THESIS). EPFL. |
| 2021 💩 | • Yadollahi, E., Chandra, S., Couto, M., Lim, A., & Sandygulova, A. (2021, June). Children, Robots, and Virtual Agents: Present and Future Challenges. In Interaction Design and Children (pp. 682-686). |
| 2021 💩 | • Amirova, A., Rakhymbayeva, N., Yadollahi, E. , Sandygulova, A., & Johal, W. (2021). 10 Years of Human-NAO Interaction Research: A Scoping Review. Frontiers in Robotics and AI, 8. |
| 2020 💩 | • S. Tulli, M. Couto, M. Vasco, E. Yadollahi , F. Melo, A. Paiva "Explainable Agency by Revealing Suboptimality in Child-Robot Learning Scenarios" International Conference on Social Robotics, 23-35. |
| 2020 💩 | • E. Yadollahi, M. Couto, W. Johal, P. Dillenbourg, A. Paiva "Exploring the role of perspective taking in educational child-robot interaction" International Conference on Artificial Intelligence in Education, 346-351. |
| 2020 💩 | • E. Yadollahi, M. Couto, P. Dillenbourg, A. Paiva "Can you guide me? supporting children's spatial perspective taking through games with robots" Proceedings of the 2020 ACM Interaction Design and Children Conference: Extended Abstracts. |
| 2020 💩 | • E. Yadollahi, P. Dillenbourg, A. Paiva "Changing Perspective as a Learning Mechanism" Companion of the 2020 ACM/IEEE Inter- national Conference on Human-Robot Interaction, 612-614. |
| 2020 💩 | • A. Güneysu Özgür, A. Özgür, T. Asselborn, W. Johal, E. Yadollahi , B. Bruno, M. Skeweres, P. Dillenbourg "Iterative Design and Evaluation of a Tangible Robot-Assisted Handwriting Activity for Special Education" Frontiers in Robotics and AI7 (2020), 29. |
| 2019 | • E. Yadollahi, W. Johal, J. Dias, P. Dillenbourg, A. Paiva "Studying the Effect of Robot Frustration on Children's Change of Perspec- tive" Workshop of Social emotions in the 8th ACM Conference on Affective Computing and Intelligent Interaction, 2019. |
| 2018 💩 | • E. Yadollahi, W. Johal, A. Paiva, P. Dillenbourg, "When Deictic Gestures in a Robot Can Harm Child-Robot Collaboration," In Proceedings of the 17th ACM Conference on Interaction Design and Children, pages 195–206. ACM, 2018. |
| 2018 💩 | • T. Asselborn, A. Guneysu, K. Mrini, E. Yadollahi , A. Ozgur, W. Johal, P. Dillenbourg, "Bringing Leters to Life: Handwriting with Haptic-Enabled Tangible Robots," In Proceedings of the 17th ACM Conference on Interaction Design and Children, pages 219–230. ACM, 2018. |
| 2016 | • E. Yadollahi, J.G. Ih, "Acoustic Characterization of Leaks in a Pipeline," In proceedings of Inter-Noise 2016. |

Service and Leadership_

Portugal

Portugal

Sep. 2018 - Sep. 2021

Aug. 2019 - Nov 2020

Switzerland

Sep 2017 - Jun. 2018

Switzerland

Feb 2017 - Jun 2018

| RPL Sum | mer School | Stockholm, Sweden |
|---|--|---------------------------|
| Organizer | | Oct. 2021 - Present |
| The divis in Stockh | ion of Robotics, Perception and Learning (RPL) at KTH Royal Institute of Technology is organising a 5-day su Iolm, Sweden | ummer school in June 2022 |
| ACM Inte | raction Design and Children (IDC) Conference 🥥 | Braga, Portugal |
| Associate C | HAIR | Jan. 2022 - Present |
| Elevator | Pitch Competition at HRI 2022 | Sapporo, Japan (Virtual) |
| Organizer | | Jan. 2022 - Mar. 2022 |
| • As part o | f social activitie within 17th Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI 2 | 2022) 🔇 |
| Special Is | sue on Child-Robot Interaction: Design, Evaluation, and Novel Solutions | Virtual |
| GUEST EDITC | R | Mar. 2021 - Present |
| • Accepted | l to Interaction Studies Journal (John Benjamins Publishing) 🔇 | |
| Children, | Robot, and Virtual Agents: Present and Future Challenges 🎯 | Athens, Greece (Virtual) |
| CO-ORGANIZ | ER | Mar. 2021 - Jun. 2021 |
| Accepted | to Interaction Design with Children Conference, IDC 2021 | |
| HRI Pion | eers Workshop 2021 🚱 | Colorado, USA (Virtual) |
| GENERAL CH | air (Non-US) | Sep. 2020 - Apr. 2021 |
| in conjug | ation with International Conference on Human-Robot Interaction, HRI 2021 | |
| Child-Rol | oot Interaction: Present and Future Relationships Workshop 🎯 | Colorado, USA (Virtual) |
| CO-ORGANIZ | ER | Aug. 2020 - Nov. 2020 |
| Accepted | to International Conference on Social Robotics, ICSR 2020 | |
| Internati | onal Conference on Human-Robot Interaction, HRI 2020 | Cambridge, U.K. (Virtual) |
| Student Vo | LUNTEER | Jan. 2020 - Mar. 2020 |
| EPFelles: | EPFL Female Student Association 🚱 | EPFL, Switzerland |
| Member | | 2020 - PRESENT |
| The cons | ulting Society EPFL 😡 | EPFL, Switzerland |
| | notice (A | 2019 - PRESENT |
| MEMOED | | |
| MEMBER | | 2016 - PRESENT |
| Fellov | vships | |
| 2017 | Laint DhD Cabalarchin DDCog DhD Debatics Drain and Cognition DhD program between | FCT Dortugal |
| 2017 | Joint PhD Scholarship. RBCog-PhD – Robotics, Brain and Cognition PhD program between | FCT, Portugal |
| | Pertural (ECT)DD/PD/125150/2017 | |
| 2012 | Korean Government Scholarshin Mactor of Science program in Mechanical Engineering at | KNIST South Koroa |
| 2012 | KAIST including tuition and monthly stipend | MIST, SOULT NOI EU |
| | | |
| Hono | rs, Awards, & Grants | |
| 2020 | Best Student Paper Award. Awarded to "Explainable Agency by Revealing Sub-optimality in | Colorado, U.S.A. (🔇) |
| | Child-Robot Learning Scenarios" at the International Conference on Social Robotics, ICSR 2020. | , (-) |
| 2020 | Future Digileaders 2020. Grant to travel to Sweden after travel restrictions are lifted. | Stockholm, Sweden (🔇) |

- HRI Pioneers Workshop 2020 Travel Grant. A premiere forum for graduate students in HRI Cambridge, U.K. (🔇) 2020 2018 Norman Foster Foundation Robotic Atelier Travel Grant. Only 10 scholars from around the world were selected and funded to travel to the one week event. 2018 CCI Student Best Paper Award. Awarded to "When Deictic Gestures in a Robot Can Harm Child-Trondheim, Norway Robot Collaboration" to at Interaction Design and Children Conference, IDC 2018. 2018 Honorable Mention in Best Paper Award. Awarded to "When Deictic Gestures in a Robot Can Trondheim, Norway Harm Child-Robot Collaboration" to at Interaction Design and Children Conferenc, IDC 2018.
- Ranked 202nd (top 0.1%). National University Admission Examination in Physics and Mathe-2007 Semnan, Iran matics Discipline 2007 Ranked 245th (top 0.1%). National University Admission Examination in Foreign Languages Semnan, Iran

Discipline

Madrid, Spain

Additional training_

| Mar. 2021 | The Road to a successful HRI: AI, Trust and ethicS - TRAITS Workshop!. | Colorado, U.S.A. (Virtual) |
|-----------|--|-----------------------------|
| Nov. 2020 | Future Digileaders 🚱. | Stockholm, Sweden (Virtual) |
| Jun. 2020 | Children's Critical Reflections on AI and Robotics Workshop ③. | London, U.K. (Virtual) |
| Mar. 2020 | HRI Pioneers Workshop 2020 🔇 . Presentation Video available at 🛗 | Cambridge, U.K. (Virtual) |
| Sep. 2019 | Social Emotions, Theories and Model Workshop 🎱. | Cambridge, U.K. |
| Jun. 2019 | Serious Games and Casual Free-to-Play Games Workshop. | Lisbon, Portugal |
| Nov. 2018 | Norman Foster Foundation Robotics Atelier. A video of the one week event is available at 💟 | Madrid, Spain |
| Sep. 2018 | SMART School on Computational Social, and Behavioral Sciences 🚱. | Paris, France |
| Jul. 2018 | Methods and Research on Gaze Tracking Workshop. | Lisbon, Portugal |
| Jun. 2018 | Near Future of Child-Robot Interaction Workshop. | Trondheim, Norway |
| Nov. 2017 | Swiss Robotics Industry Day 2018. Poster presented at the event is available here 🗋 | Lausanne, Switzerland |
| Oct. 2017 | Robots for Learning (R4L) Workshop. | Switzerland |
| Sep. 2017 | Social Human-Robot Interaction Summer School 🚱. | Alentejo, Portugal |

Skills_____

| Programming | Advanced: | ・Python ・C# ・Java ・QML ・MATLAB ・ET _E X |
|--------------------------|---------------|---|
| | Intermediate: | •QTQuick •Processing •C •C++ •R •PHP |
| | Beginner: | • QBasic • Fortan • Pascal |
| Operating Systems | Advanced: | • ROS • Linux • Windows |
| Software | Advanced: | Unity Game Engine IBM SPSS SolidWorks AutoCAD CATIA |
| | Intermediate: | •Blender •InDesign •Illustrator •Photoshop •Unreal Engine |

Reviewing_____

Journals: • ACM Transactions on Human-Robot Interaction (THRI) Conferences: • ACM/IEEE HRI

- Journal of Engineering and Technology Management
- International Journal of Child-Computer Interaction
- Frontiers in Psychology
- User Modeling and User-Adapted Interaction
- Paladyn, Journal of Behavioral Robotics

Languages ______ Hobbies _____

| English | Full professional proficiency | C2 |
|------------|---------------------------------|-----------|
| | TOEFL iBT: 105 & GRE: 312 | Dec. 2014 |
| Persian | Native or bilingual proficiency | C2 |
| Korean | Limited Working Proficiency | B2 |
| French | Elementary proficiency | A2 |
| Swedish | Elementary proficiency | A1 |
| Portuguese | Elementary proficiency | Al |
| | | |

- ACM IDC
 - ACM CHI
 - ACM and SIGCHI HAI
- SIGCHI CHI PLAY
- ASME Manufacturing Science and Engineering MSEC

- Photography
- Traveling & Backpacking
- Drawing & Painting
- Fitness & Strength Training
- Extreme Sports