

MOJGAN HASHEMIAN

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EDUCATION

- **PhD Candidate in Information Systems and Computer Engineering**, Instituto Superior Técnico, University of Lisbon, Lisbon, Portugal. 2016 - 2021
– **Thesis Title:** “*Virtual Characters with Believable Social Dynamics*”, Adviser Dr. Rui Prada, Co-Adviser Dr. Pedro Santos.
- **M.Sc. in Computer Engineering - Artificial Intelligence and Robotics**, School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran. 2011 - 2014
– **Thesis Title:** “*Automatic Extraction of Users’ Mood States while Working with Computers*”, Adviser Dr. Hadi Moradi, Co-Adviser Dr. Maryam S. Mirian, Consultant Dr. Mehdi Tehrani-doost.
- **B.Sc. in Computer Engineering - Hardware**, School of Computer Engineering, Iran University of Science & Technology, Tehran, Iran. 2005 - 2010
– **Thesis Title:** “*Extending the Neocognitron Neural Network to Complex Space*”, Under Supervision of Dr. Nasser Mozayani.
- **Diploma in Mathematics and Physics**, Nemouneh High School*, Sabzevar, Iran. 2001 - 2005
* Entrance to this school is only possible via a competitive exam

RESEARCH INTERESTS

Artificial Intelligence, Socially Intelligent Agents, Human-Robot Interaction, Affective Computing.

AWARDS & HONORS

- **ACM Student Travel Grant** for AAMAS 2019.
- **AAAC Student Travel Grant** for ACII 2019.
- **UID/CEC/50021/2019** Fellowship, BIM Grant AMIGOS (Affect Modeling for robots In GrOup Social interactions): 2019-2020.
- **H2020-ICT-21-2014** Fellowship, Grant No. 644187 RAGE (Realising an Applied Gaming Ecosystem): 2015-2019.
- **Top 0.3%** of Iran's Nationwide University Entrance Exam for Graduate Students. 72th rank among nearly 20,000 participants, 2010.
- **Top 0.6%** of Iran's Nationwide University Entrance Exam for Undergraduate Students, among nearly 340,000 participants, 2005.

SELECTED PUBLICATIONS

Conference

- **M. Hashemian**, M.Couto, S. Mascarenhas, A. Paiva, P. A Santos, R. Prada, *Investigating Reward/Punishment Strategies in the Persuasiveness of Social Robots*, in The 29th IEEE International Conference on Robot & Human Interactive Communication (RO-MAN2020), Naples, Italy, (Link).
- **M. Hashemian**, A. Paiva, S. Mascarenhas, P. A Santos, R. Prada, *The Power to Persuade: A Study of Social Power in Human-Robot Interaction*, in The 28th IEEE International Conference on Robot & Human Interactive Communication (RO-MAN2019), New Delhi, India, (Link).

- **M. Hashemian**, R. Prada, P. Santos, J. Dias, S. Mascarenhas, *Emotion Recognition from Touching Patterns*, 8th International Conference on Affective Computing & Intelligent Interaction (ACII 2019), (Link).
- **M. Hashemian**, R. Prada, P. A. Santos, S. Mascarenhas, *Enhancing Believability of Virtual Agents using Social Power Dynamics*, In ACM SIGAI International Conference on Intelligent Virtual Agents (IVA), 2018, (Link).
- **M. Hashemian**, H. Moradi, M. S. Mirian, M. Tehrani-doost, *Determining mood via emotions observed in face by induction*. In Robotics and Mechatronics (ICRoM), 2014 Second RSI/ISM International Conference on (pp. 717-722). IEEE. (Link).

Book Chapter

- **M. Hashemian**, R. Paradedda, C. Guerra, A. Paiva, “*Do You Trust Me? Investigating the Formation of Trust in Social Robots*”, 19th EPIA Conference on Artificial Intelligence, (Link).
- **M. Hashemian**, H. Moradi, M. S. Mirian, “*How is his/her Mood?: A question that a Companion Robot may be able to answer*”, 8th International Conference on Social Robotics, November 2016, Kansas City, USA, November 2016. Springer International Publishing (Link).
- **M. Hashemian**, H. Moradi, M. S. Mirian, M. Tehrani-doost, R. K. Ward, *Is the Mood really in the Eye of Beholder?*, 17th International Conference on Human-Computer Interaction, Los Angeles, CA, USA, August 2015. Springer International Publishing (Link).

Abstract

- **M. Hashemian**, M. Couto, S. Mascarenhas, A. Paiva, P. A. Santos, R. Prada, *The application of Social Power in Persuasive Social Robots*, in the 15th Annual ACM/IEEE International Conference on Human Robot Interaction (SIGCHI HRI2020), Cambridge, UK. (Link).
- **M. Hashemian**, *Social Power in Human-Robot Interaction: Towards More Persuasive Robots*, in 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS’2019), Canada, (Link).
- R. B. Paradedda, **M. Hashemian**, C. Guerra, R. Prada, J. Dias, A. Paiva, *FIDES: How Emotions and Small Talks May Influence Trust in an Embodied vs. Non-embodied Robot*, in 16th International Conference on Autonomous Agents and Multiagent Systems (SIGCHI AAMAS2017), Brazil. (Link).

SELECTED ACADEMIC PROJECTS

• Graduate Projects

- **Persuasive Social Agents using Social Power Dynamics**, PhD Thesis for Graduation in Information Systems and Computer Engineering, Fall 2020.
In this thesis, we aimed at designing persuasive social agents using social power dynamics. Inspired by theories of social science, we designed and programmed social robots to manipulate decision making of human users and change their behavior.
- **FIDES: How facial expressions may influence the trust in a robot?**, Social Robotics and Human Robot Interaction Course. Fall 2015.
In this project, we address the level of trust that a human subject would make in a robot under different circumstances. To examine this hypothesis, we conducted an experiment in which a robot tells a story to a subject, then asks for help in the form of donations. The results showed that the two factors can make a positive influence on people trust in social robots.

- **Automatic Extraction of User’s Mood State**, M.Sc. Thesis for Graduation in Artificial Intelligence and Robotics, Summer 2014.
In this project we propose a non-intrusive approach to recognize mood states, using emotional features observed in face. The proposed approach has been designed in two different methodologies, non-inductive and inductive methods. Both methods are tested and evaluated by three different experiments, and it is proved that they are promising.
- **Application of RFF, TSK, SVM, and LS-SVM for Identification of an industrial dryer**, System Identification Course Project, Spring 2012.
In this project, we aimed at building different mathematical models of an industrial dryer using measurements of the system’s input and output signals. To model this dynamic and non-linear system, we used 867 samples and trained and evaluated the mentioned four models.
- **Localization and Obstacle Avoidance Planning for e-puck**, Advanced Robotics Course Project, Spring 2012.
In this project, after determining e-puck’s sensor model, we performed robot localization and obstacle avoidance using UKF, AEKF, Kalman, and particle filters, both in Webots and in the real-world.
- **Population Growth and Cooperation Dynamics in Evolutionary Game Theory**, Social Networks Course Project, Spring 2012.
The project consists of two parts, theory and simulation. In the theory phase, the basics of Classic Game theory and its extension as Evolutionary Game Theory have been surveyed. In the simulation part, the Prisoner Dilemma, one classic example in Game Theory, has been simulated and the evolution of population growth is investigated.
- **The effect of Belief on Decision Making**, Machine Learning Course Project, Fall 2011.
In this project, the effect of internal beliefs on the decision making process is examined. To do so, we propose a model which takes into account fuzzy-coded beliefs of an agent.
- **Classification of Persian Alphabet**, Pattern Recognition Course Project, Fall 2011.
In this project, 32 letters of Persian alphabet were classified using different techniques, such as Support Vector Machine (SVM), Neural Network Classifier, and K- Means.
- **Undergraduate Projects**
- **Extending the Neocognitron Neural Network to Complex Space**, B.Sc. Thesis for Graduation in Computer Hardware Engineering, Summer 2010.
In this project, we extend the Neocognitron Artificial Neural Network, which has been used extensively for handwritten recognition, to complex space with the aim of using spacio-temporal information to make this network capable of processing on-line handwritten recognition.
- **Simulating a Cache Server**, Computer Networks course Project, Spring 2010. In this project we simulate a cache server using Socket Programming in JAVA.

TECHNICAL STRENGTHS

Modeling & Analysis	SPSS, R
Academic Software Packages	Weka, Clementine, Elan, WebQDA, Netlogo, Gephi, Webots.
Programming Languages	Python, Java, Matlab, C/C++, C#. <i>Logic</i> : (PROLOG), <i>Hardware Description Language</i> : (Verilog, VHDL), <i>Web</i> : (HTML, PHP, JavaScript), <i>Database</i> : (MySQL & Oracle).
Tools & Frameworks	OpenCV, TensorFlow, PySpark, Pandas, Scikit-learn

RESEARCH EXPERIENCE

- **GAIPS INESC-ID** Jul. 2015-Present
Doctoral Researcher - Projects: *Lisbon, Portugal*
 - Fides: a study on Trust in Human-Robot Interaction
 - RAGE: Emotion Recognition from Touching Patterns
 - AMIGOS: Empowering Social Robots using Social Power Dynamics
- **Advanced Robotics and Intelligent Systems Lab, University of Tehran** Jun. 2012-2016
M.Sc. Student Researcher - Projects: *Tehran, Iran*
 - Modeling humans in human-computer interaction
 - Evaluation of Cognitive Games

TEACHING EXPERIENCE

- **University of Hull** Oct. 2020- Jan. 2021
Part-time lecturer *Hull, UK*
 - Data Analysis and Visualization (Graduate)
- **Instituto Superior Técnico** 2017-2018
Teaching Assistant *Lisbon, Portugal*
 - Autonomous Agents and Multi-Agent Systems, Spring 2018.
- **Asre Dino Danesh (ADD University)** 2013-2014
Guest Lecturer *Tehran, Iran*
 - Web-Based Programming, Fall 2013.
 - Data Structure, Fall 2013.
 - Information Technology in Organizations, Spring 2014.
- **School of ECE, Univeristy of Tehran** 2011-2013
Teaching Assistant *Tehran, Iran*
 - Social Networks (Graduate), Fall 2012.
 - Introduction to Computer Systems and Programming, Fall 2011, 2012, 2013.
 - Introduction to E-Learning, Spring 2013.

WORK EXPERIENCE

- **FANAP** January 2015-August 2015
Java Developer *Tehran, Iran*
 - MIDHCO Enterprise Total Solution Database Middleware: Developing an Object Relational Mapping (ORM), which maps Java OOP objects to Oracle and MySQL tables.

RELEVANT COURSEWORK

- Graduate**
 - Machine Learning
 - Pattern Recognition
 - Inferential Statistics
 - Advanced Robotics
 - Bio-inspired Computing
 - Social Networks
 - System Identification
 - Fuzzy Systems
 - Affective Computing

- Social Robotics and Human-Robot Interaction
- Algorithm Analysis and Design
- Probability and Statistics for Engineers

Undergraduate

- Artificial Intelligence
- Signal and Systems
- Linear Algebra
- Linear Control Systems
- Advanced Programming in Java
- Introduction to programming in C++

Online

- Complete *Python* Bootcamp: From Zero to Hero in Python (24 hours)
- Python for *Computer Vision* with OpenCV and Deep Learning (14 hours)
- Python for *Data Science* and *Machine Learning* Bootcamp (25 hours)

STUDENTS MENTORED

- Payam Jom'e Yazdian: M.Sc. Thesis: User Mood Detection in a Social Network Messenger Based on Facial Cues.
- Fojan Babaali: Mood Recognition using Facial Emotional Cues and Personality.

COMMUNITY SERVICE

- GHC (Grace Hopper Celebration of Women in Computing), Program Committee of the Artificial Intelligence track 2018, 2019 and 2020.
- Referee/Reviewer
 - IEEE Transaction on Affective Computing
 - Frontiers in Psychology
 - ACM International conferences (HRI'20, IDC'20, HAI'20)
 - The 8th and the 12th International Conference on Social Robotics (ICSR 2016 & 2020)
 - The 24th Iranian Conference on Electrical Engineering (ICEE 2016)

VOLUNTEER

- **Website Coordinator** of ACM-W UK
- **Student Volunteer** in ACII (8th International Conference on Affective Computing & Intelligent Interaction), 2019.
- **Student Volunteer** in AAMAS (International Conference on Autonomous Agents and Multiagent Systems), 2019.
- **Remote Volunteer** in Women of MENA in Tech Conference, 2019.
- **Head of Scientific Unit** of the Union of Islamic Students Associations in Lisbon, 2018.
- **Supervisor** of Mehrabani Charity.

LANGUAGE SKILLS

- **Persian:** Native.
- **English:** Fluent (IELTS Score: Overall 7 [Listening 7, Reading 7, Writing 7, Speaking 7]).
- **Portuguese:** Intermediate (B2 Level).
- **Arabic:** Familiar.

HOBBIES

Hiking, Traveling, Gardening, Reading, Live Theatre.

PERSONAL TRAITS

- Ambitious and eager to learn new things.
- Ability to work as an individual as well as in group.

REFERENCES

Available upon request.

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