Mojgan Hashemian

CONTACT INFORMATION

GAIPS, INESC-ID
Instituto Superior Tecnico
University of Lisbon,
Lisbon, Portugal

Mobile: (+351) 914-226-662
E-mail: mojgan.hashemian@tecnico.ulisboa.pt
Personal Web-page

EDUCATION

- **PhD Student in Information Systems and Computer Engineering,** Instituto Superior Tecnico, University of Lisbon, Lisbon, Portugal, *2016 - Current*
  - **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
- **Other Training**
  - WINTER SCHOOL ON ARTIFICIAL INTELLIGENCE FOR GAMES 2016 - Barcelos, Portugal
  - GALA
  - CogC
  - Mind & Brain

RESEARCH INTERESTS

Social Robotics, Humar-Robot Interaction, Socially Intelligent Agents, Affective Computing, Human-Computer Interaction, Intelligent Systems, Intelligent Games, Cognitive Science.

AWARDS & HONORS

- **H2020-ICT-21-2014** Fellowship, Grant No. 644187 RAGE (Realising an Applied Gaming Eco-system).
- **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.

Publications

- **Conference**
  - **M. Hashemian**, H.Moradi, M. S. Mirian, M. Tehrani-doost, A. Nikoukaran, *Determining Mood using Emotional Features*, in 7th International Symposium on Telecommunications (pp. 418-423), Tehran, Iran, September 2014. (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).
  - **M. Hashemian**, R.Prada, P. A. Santos, S. Mascarenhas, *Towards more Social Intelligent Agents using Social Power Dynamics*, submitted In Computational Intelligence and Games (CIG), 2018 IEEE Conference on. (Under Review).
  - **M. Hashemian**, R.Prada, P. A. Santos, S. Mascarenhas, *Enhancing Believability of Virtual Agents using Social Power Dynamics*, submitted In ACM International Conference on Intelligent Virtual Agents (IVA), 2018 (Under Review).
- **Book Chapter**
  - **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 (pp. 712-717). (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 (pp.274-284). (Link).
  - R. B. Paradeda, **M. Hashemian**, R. A. Rodrigues, A. Paiva, *"How Facial Expressions and Small Talk May Influence Trust in a Robot"*, 8th International Conference on Social Robotics, November 2016, Kansas City, USA, November 2016. Springer International Publishing (pp.169-178). (Link).
- **Abstracts**
  - **M. Hashemian**, H.Moradi, M. S. Mirian, M. Tehrani-doost, N. Mahmoudyar, *Recognizing Mood using Facial Emotional Features*, in 3rd Basic and Clinical Neuroscience Congress, (BCNC 2014), Tehran, Iran, October 2014.(Link).
  - A. Nadi, **M. Hashemian**, H.Moradi, M. S. Mirian, *Human mood detection using eye tracking.* In in 4th Basic and Clinical Neuroscience Congress, (BCNC 2015), Tehran, Iran, December 2015. (Link).
  - R. B. Paradeda, **M. Hashemian**, R. A. Rodrigues, A. Paiva, *The FIDES: How facial expression may influence the trust in a robot?*, in RO-MAN: The 25TH IEEE International Symposium on Robot and Human Interactive Communication, New York.
  - R. B. Paradeda, **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 (AAMAS2017), Brazil. (Link).

- **Papers in Hand**
  - **Mojgan Hashemian**, Samuel Mascarenhas, Ana Paiva, *Empowering Social Robots using Social Power Dynamics.*
  - Raul Paradeda, **Mojgan Hashemian**, Carla Guerra, Rui prada, Joao Dias, Ana Paiva, *What Makes us Trust in Robots? An Approach to Evaluate Factors that may Influence the Trustworthiness of a Robot*
  - **M. Hashemian**, H.Moradi, M. S. Mirian, M. Tehrani-doost, N. Mahmoudyar, *Recognizing Mood using Facial Emotional Features*
  - **M. Hashemian**, Rui Prada, Pedro Santos, Joao Dias, Samuel Mascarenhas, *Emotion Recognition from Touching Patterns*

Selected Academic Projects

- **Graduate Projects**
  - **An approach to Emotion Recognition using Touching Patterns in Games**, Affective Computing Course. Fall 2016.
    In this project, we proposed a data-driven model to recognize emotions via touching patterns of individuals playing a game on a typical tablet. We have considered a set features highlighting the differences in performed strokes under different emotional states. The trained model recognizes the six basic emotions with an accuracy of 71.92%±0.51.
  - **Towards More Socially Intelligent Agent using Social Power Dynamics**, Artificial Life Course. Spring 2016.
    The objective of this project is to propose an authoring-friendly model for social intelligent agents capable of perceiving and representing *Social Power* in their decision making process. The project is inspired by the recently proposed social power model SAPIENT and is considered as a simplified version of SAPIENT, in a computational and authoring friendly way, which makes it easier to be implemented in games.
  - **FIDES: How facial expression may influence the trust in a robot?**, Social Robotics and Human Robot Interaction Course. Fall 2015.
    In this study, 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 a help in 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.
  - **Automatic Extraction of Users' Mood States Using Keystroke and Mouse Movements in an Intelligent Tutoring System**, M.Sc. Seminar Report, Fall 2013. In this project we propose another non-intrusive approach states, using mouse movements and keystroke features to recognize mood. The proposed approach has been evaluated by a real experiment.

- **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, basics of Classic Game theory and it's extension as Evolutionary Game Theory have been surveyed. In the simulation part, the Prisoners Dilemma, one classic example in Game Theory, has been simulated 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 decision making process is examined. To do so, we propose a model which takes into account fuzzy-coded beliefs of an agent as .

- **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.
  - **Implementing MIPS on FPGA**, Computer Aided Design course project, Fall 2008.
    - An FPGA Implementation of a MIPS RISC Processor was simulated in VHDL using ModelSim and tested on a set of testbenches.

Professional Experience

- **Researcher, GAIPS INESC-ID,** Lisbon, Portugal. Since September 2015 - Current. Projects:
  - Fides: a study on Trust in Human-Robot Interaction
  - Emotion Recognition from Touching Patterns
  - Modeling Social Power in Agent Architectures
  - Empowering Social Robots using Social Power Dynamics

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

- **Researcher, Advanced Robotics and Intelligent Systems Lab,** University of Tehran, Tehran, Iran. Since June 2012 - 2016.
  - Modeling humans in human-computer interaction

- The goal of this project is to model humans during interaction with computers/robots. The main focus is on mood with interaction with personality and emotion. To determine mood, we focus on emotional clues observed in facial expressions. We have developed a framework for mood detection based on two methods depending the interaction time, short interaction around two minutes, or long interaction around couple of hours.

- **Researcher, Cognitive Science and Technologies Council,** Tehran, Iran. October - December 2014.
  - **Evaluation of Cognitive Games**
    - The first necessary step in developing a new game is examining the national requirements and also previously developed Cognitive Games features. In the first phase of this project, we have evaluated other games and provided a rich database including comprehensive information about cognitive games such as game objectives, examining cognitive factors, etc. Furthermore we surveyed our national needs in the context of genre, game-play, environment and character, etc.

- **Guest Lecturer, Asre Dino Danesh (ADD University),** Tehran, Iran, 2013 - 2014.
  Teaching Courses:
  - Web-Based Programming, Winter 2013.
  - Data Structure, Winter 2013.
  - Information Technology in Organizations, Summer 2014.

- **Teaching Assistant, University of Tehran (ECE Department),** Tehran, Iran, 2011 - 2013.
  Courses:
  - Social Networks (Graduate), Fall 2012.
  - Introduction to Computer Systems and Programming, Fall 2011, 2012, 2013.
  - Introduction to E-Learning, Spring 2013.

- **Teaching Assistant, Instituto Superior Tecnico (DEIC Department),** Lisbon, Portugal, 2017 - 2018.
  Course:
  - Autonomous Agents and Multi-Agent Systems, Spring 2018.

Community service

- **GHC (Grace Hopper Celebration of Women in Computing)**, Program Committee of the Artificial Intelligence track 2018.

- **Referee/Reviewer**
  1. The 24th Iranian Conference on Electrical Engineering (ICEE 2016)
  2. The Eight International Conference on Social Robotics (ICSR 2016)

Computer Skills

- **Programming Languages:** Java, Matlab, C/C++, C#.
  Logic: (PROLOG), Hardware Description Language: (Verilog, VHDL), Web: (HTML, PHP, JavaScript), Database: (MySQL & Oracle).
- **Computer Software:** IntelliJ Idea & Eclipse & Visual Studio & Matlab IDEs, MS Word & Excel & PowerPoint, ModelSim Simulator, Moodle CMS.
  Academic Software Packages: Weka, Clementine, SPSS, Elan (Multimedia Annotation Tool), Netlogo, Gephi, Webots (Robotic Simulator).

Language Skills

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

Volunteer

- **Head of Scientific Unit** of the Union of Islamic Students Associations in Lisbon
- **Sunday School Teacher** in Ale Yasin Islamic and Cultural Center

References

- **Dr. Hadi Moradi**, Associate Professor, School of Electrical and Computer engineering, University of Tehran. *E-mail:* moradih@ut.ac.ir
- **Dr. Maryam S. Mirian**, Machine learning Research Scientist, University of British Columbia, Vancouver, BC . *E-mail:* mmirian@ut.ac.ir

Hobbies

Hiking, Traveling, Reading, Listening to Music, Watching Movies, Live Theatre.

Last Update: 1 Jun. 2018