

## Tohid Alizadeh

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Department of Robotics and Mechatronics,  
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### Research Interests

Programming by demonstration, robot control, learning algorithms, statistical modeling, applied machine learning, human-robot interaction, human friendly robotics.

### Education

#### PhD in Robotics

*University of Genoa-Italian Institute of Technology (IIT), Genoa, Italy, 2011-2014*

- *Field of Study:* Robot learning by imitation
- *Thesis title:* Statistical learning of task modulated human movements through demonstration
- *Supervisor:* Dr. Sylvain Calinon

#### M.Sc. in Instrumentation and Automation Engineering

University of Technology (PUT), Tehran, Iran, 2004-2007

- *Field of Study:* System Identification, Process Control, Neural Network and Fuzzy Modeling
- *Thesis Title:* Identification of Hybrid Systems for Model Predictive Control
- *Supervisor:* Dr. Karim Salahshoor
- *GPA:* 17.97/20

#### B.Sc. in Electrical Engineering, Bioelectric

Sahand University of Technology (SUT), Tabriz, Iran, 2000-2004

- Final Project: Design and manufacture of a Blood Pressure Measurement Unit”
- *Supervisor:* Dr. Amir Reza Saffari Azar
- *GPA:* 16.20/20

#### Diploma in Mathematics and physics

- Valfajr High School, Tabriz, Iran, 2000
- *GPA:* 18.20/20

### Work Experience

- Assistant professor, Department of Robotics and Mechatronics, School of Science and Technology, **Nazarbayev University**, Astana, Kazakhstan, August 2015 - present  
Courses: Linear control systems with lab
- Instructor, Department of Robotics and Mechatronics, School of Science and Technology, **Nazarbayev University**, Astana, Kazakhstan, August 2014 - July 2015  
Courses: Electrical circuits lab, Signals and sensing lab, Industrial automation, Microcontrollers lab

- Fellow researcher, Department of advanced robotics, **Istituto Italiano di tecnologia (IIT)**, Genova, Italy, January 2014- April 2014
- Faculty member and head of Electrical Engineering group, **Bonab University**, Bonab, Iran, 2009-2011  
Courses: Linear control systems, General Lab for Electrical Engineering, Signals and Systems, Linear control systems Lab, Pulse Circuits Lab, Microprocessors Lab, Technical English, Special topics in electrical engineering (LABVIEW programming), Supervision of several final year projects
- Seasonal Lecturer, **Azad University of Bonab**, Bonab, Iran, 2010  
Courses: Special topics in electrical engineering (AVR microcontrollers - LABVIEW programming)
- Seasonal Lecturer, **Bonab University**, Bonab, Iran, 2008  
Courses: Linear control systems, Linear control systems Lab, Signals and Systems, Electronic I lab, Technical English
- Seasonal Lecturer, **Seraj Higher Education Institute** and **Roshdiyyeh Higher Education Institute**, Tabriz, Iran, 2006-2009  
Courses: Designed and managed an electrical circuit laboratory, Electrical circuits I, Digital design, Pulse circuits Lab, Electricity physics Lab, Technical English, Supervision of several final year projects
- Part time research and development engineer, **Simcat Co.**, Tabriz, Iran, 2003-2004
- BSc apprenticeship, **Madani heart diseases hospital**, Tabriz, Iran, summer 2003  
Maintenance and reparation of medical instruments and devices

## Trainings

- General Training For Workers (mainly safety issues)  
Italian Institute of Technology, Genova, Italy, February 2013.
- 3rd Pattern Analysis and Computer Vision (PAVIS) School on Computer Vision, Pattern Recognition, and Image Processing, Sestri Levante (Genova), Italy, 2-5 October, 2012,  
main focus: Component Analysis methods for Human Sensing.
- 18th Machine Learning Summer School (MLSS), Bordeaux, France, 4-17 September 2011,  
acceptance rate: 35%
- Regularization Methods for High Dimensional Data, Department of Computer and Information Science (DISI), University of Genova, Genova, Italy, 6-10 June, 2011,
- Simatic S7, Simatic WINCC and Industrial Networking  
Petroleum University of Technology and REFEN, Tehran, Iran, 2006,

## Awards and Honors

- PhD research scholarship  
Universita degli Studi di Genova (2011-2014)
- Member of Italian institute of technology (IIT) football team, 2012
- MSc scholarship  
Ministry of Petroleum, Petroleum university of technology (2004-2007)
- Member of Iranian Authors

- Awarded the best research for Thermo Electric Cooler (TEC) in the Electrical Engineering faculty of the Sahand University of Technology (2002)
- Ranked in top 1% in the nationwide university entrance exam for undergraduate studies (2000)
- Ranked in top 5% in the nationwide Electrical Engineering entrance exam for graduate studies (2003)
- Ranked in top 3% in the nationwide Automation & Instrumentation entrance exam for graduate studies (2003)

## Professional Activities

### Reviewer

- IEEE International Conference on Robotics and Automation (ICRA) - (2014, 2015),
- IEEE-RAS International Conference on Humanoid Robots (Humanoids) - (2012),
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) - (2012, 2013),
- Asian Control Conference (ASCC) - (2015).

### University services

- Departmental member for the SST Website Committee, Nazarbayev University, Astana, Kazakhstan - (2014-2015).
- Departmental member for the Education Council, Bonab university, Bonab, Iran - (2009-2011).

### Conference Activities

- Technical session chair at 10<sup>th</sup> Asian control conference (ASCC), Kota Kinabalu, Sabah, Malaysia, 2 June 2015.
- Program Committee Member of Workshop on Machine Learning for Social Robotics, a workshop in association with IEEE International Conference on Robotics and Automation (ICRA 2015), 26 May, Seattle, Washington, USA.
- International Advisory Board, International conference on Advanced Technology and Sciences (ICAT'15), 4-7 August 2015, Antalya, Turkey.

## Publications

### Books and book chapters

1. T. Alizadeh, and M. R. Jafari, "**Signals and Systems**", Ghalamchi Publications, 2006 (In Farsi)
2. M.R. Jafari, and T. Alizadeh, "**Electrical Machinery**", Ghalamchi Publications, 2006 (In Farsi)
3. H. Faezi, K. Amanian, M. R. Jafari, and T. Alizadeh, "**Electromagnetics**", Ghalamchi Publications, 2006 (In Farsi)

### Conference and Workshop papers

1. T. Alizadeh, S. Barzegari, "**Fault tolerant control of electromagnetic suspension system with simultaneous sensor and actuator faults**", 10th Asian Control Conference (ASCC), Sutera Harbour Resort, Sabah, Malaysia, May 31-June 3, 2015.

2. T. Alizadeh, S. Calinon, "**Human movement learning with Dynamic movement primitives combined with mixture models**", Nazarbayev university research week, Astana, Kazakhstan, 2014.
3. T. Alizadeh, S. Calinon, and DG. Caldwell, "**Learning from demonstrations with partially observable task parameters**", IEEE International conference on Robotics and Automation (ICRA), Hong Kong, China, May 31-June 5, 2014.
4. S. Calinon, T. Alizadeh, and DG. Caldwell, "**On improving the extrapolation capability of task-parameterized movement models**", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Tokyo, Japan, 3-7 November, 2013 (CoTeSys cognitive robotics best paper award finalist).
5. S. Calinon, Z. Li, T. Alizadeh, NG. Tsagarakis, and DG. Caldwell, "**Statistical dynamical systems for skills acquisition in humanoids**", IEEE International Conference on Humanoid Robots (Humanoids), Osaka, Japan, 28-30 November, 2012.
6. S. Calinon, Z. Li, T. Alizadeh, NG. Tsagarakis, and DG. Caldwell, "**Teaching of bimanual skills in a compliant humanoid robot**", 5th International Workshop on Human-Friendly Robotics (HFR), Brussels, Belgium, 18-19 October, 2012.
7. T. Alizadeh, A. Alziadeh, S. Sepasi, and S. Barzegary, "**Comparison of two online hybrid system identification methods**", IMECS international conference on Control and Automation, Hong-Kong, March 2010.
8. A. Alizadeh, T. Alizadeh, and Z. Daie, "**Optimal threshold selection for online verification of Signature**", IMECS international conference on Artificial Intelligence and Applications, Hong-Kong, March 2010.
9. Rostami, A., A. Alizade, H. Bagban, T. Alizade, and H. Balazadeh Bahar, "**Phonon engineering in nanoscale layered structures**," In Asia Communications and Photonics Conference and Exhibition, Optical Society of America, 2010.
10. T. Alizadeh, K. Salahshoor, M. R. Jafari, A. Alizadeh, and M. Gholami, "**On-line Fuzzy Identification of Hybrid Systems using a Potential Fuzzy Clustering Approach**", IEEE SMC International Conf. on Distributed Human-Machine Systems (DHMS 2008), Athens, Greece, Mar. 2008.
11. M. Gholami, K. Salahshoor, M. Tabatabaei-pour, H. Shaker, and T. Alizadeh, "**Improved Model Predictive Control of Discrete-time Hybrid Systems with Mixed Inputs**", The 33rd Annual Conf. of the IEEE Industrial Electronics Society (IEEE IECON), Taipei, Taiwan, Nov. 2007.
12. J. Rezaei, M. Gholami, R. Firuzi, T. Alizadeh, and K. Salahshoor, "**Interior Permanent Magnet Synchronous Motor (IPMSM) Adaptive Genetic Parameter Estimation**", The World Congress on Engineering and Computer Science (WCECS 2007), San Francisco, USA, Oct. 2007.
13. M R. Jafari, T. Alizadeh, M. Gholami, A. Alizadeh, and K. Salahshoor, "**On-line Identification of Non-Linear Systems Using an Adaptive RBF-Based Neural Network**", The World Congress on Engineering and Computer Science (WCECS 2007), San Francisco, USA, Oct. 2007.
14. T. Alizadeh, K. Salahshoor, M. R. Jafari, M. Gholami, and A. Alizadeh, "**On-line Identification of Hybrid Systems Using an Adaptive Growing and Pruning RBF Neural**

**Network**", the 12th IEEE Conf. on Emerging Technologies and Factory Automation (IEEE ETFA), Patras, Greece, Sept. 2007.

15. T. Alizadeh, A. Alizadeh and A. Mamizadeh, "**Miniature thermoelectric coolers**", 6th Iranian Students Conf. on Electrical Engineering (ISCEE), Tabriz, Iran, 2002 (In Farsi).
16. T. Alizadeh and A. Alizadeh, "**Biosensors based on ISFET, PdMOSFET Technology and their applications**", 2nd Iranian Students Conf. on Biomedical Engineering (ISCBME), Shahed University, Tehran, Iran, 2001 (In Farsi).

### Presented Posters

1. T. Alizadeh, S. Calinon, "**Human movement learning with dynamic movement primitives combined with mixture models**", Nazarbayev university research week, Astana, Kazakhstan, 24-28 Nov, 2014.
2. S. Calinon, P. Kormushev, T. Alizadeh, DG. Caldwell, "**Towards a robot Pizzaiolo? Imitating continuous movements with parametric Gaussian mixture regression**", Robotic challenge program at Twenty-Fifth AAAI Conference on Artificial Intelligence, San Francisco, USA, 8-11 Aug, 2011.
3. Sylvain Calinon, Petar Kormushev, Tohid Alizadeh and Darwin G. Caldwell, "**Imitating continuous movements with parametric Gaussian mixture regression**", Machine Learning Summer School, Bordeaux, France, 4-17 September, 2011.

### Software and Programming

- Programming: Matlab, C++, Visual Basic, Assembly
- Engineering: Matlab and Simulink, Electronic Workbench, Simatic S7, Proteus, Hysis, Bascom, LabVIEW, Creo, CODESYS
- General: Moodle (learning platform), Latex, Microsoft Office (Word, PowerPoint, Access, Excel, Visio)

### Language skills

- English, Italian (basic knowledge), Azerbaijani, Turkish, Farsi (Persian)

### Reference

Available upon request

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