



# Hossein Hassanpoor

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## EDUCATIONAL QUALIFICATION

- **Ph.D.**, Biomedical Engineering [February 09, 2015]  
Dissertation Title: *Modeling the role of astroglial cell in learning and formation of spatial memory in CA1 region of hippocampus*  
Supervisor: Dr. Ali Fallah, Amirkabir University of Technology, Tehran, Iran  
GPA: 17.26 /20.00  
Dissertation: 19.5/ 20.00
- **M.Sc.**, Biomedical Engineering [January 31, 2009]  
Thesis Title: *Control the pressure and position of robot by using of movement of man's hand*  
Advisor: Dr. A. Fallah, Amirkabir University of Technology, Tehran, Iran  
GPA: 17.19 /20.00  
Thesis: 20.00/ 20.00
- **B.Sc.**, Electrical Engineering [September 22, 2006]  
Thesis Title: *Camera control using AVR and PC monitoring using Visual Basic*  
Advisor: Dr. M. Sayedi, Isfahan University of Technology, Isfahan, Iran  
GPA: 14.62/20.00  
Thesis: 20.00/ 20.00
- **National Diploma in Mathematics and Physics** [June 21, 2002]  
Ostad Reza Ruzbeh High School, Zanjan, Iran.  
GPA: 18.80/20.00

## RESEARCH INTERESTS

- Investigation and Analysis of the Human Cognitive Behavior Using fNIR and QEEG
- Computational Neuroscience and Modeling of Biological systems
- Bio Instrument and Image Processing system
- Signal Processing, Machine Learning (Cognitive Method) and Deep Learning
- Data Mining and Big Data Analysis
- Application of Quantum Computing for Data Processing

## RESEARCH PAPERS

- An Investigation into the Effective Role of Astrocyte in the Hippocampus Pattern Separation Process: Computational Modeling Approach. H. Hassanpoor, M. Saidi. *The Journal of Integrative Neuroscience* (2018).
- Proposed New Signal Indicating Stress Level On-line: Combination of Physiological Measures. Mayam saidi, Hossein Hassanpoor, Abdolaziz Azizi Lari. *Amirkabir International Journal of Electrical & Electronics Engineering*, 49(1):11-18, (2016).
- Mechanisms of Hippocampal Astrocytes Mediation of Spatial Memory and Theta Rhythm by Gliotransmitters and Growth Factors. H. Hassanpoor, A. Fallah, M. Raza. *Cell Biology International*, 38(12): 1355-66, (2014).
- New Role for Astroglia: Formation of Muscle Memory. H. Hassanpoor, A. Fallah, M. Raza. *Medical Hypotheses*, 79(6):770-3, (2012).

## CONFERENCE & POSTER PRESENTATIONS

- Gamma Camera: past, present and future, the effects of new technologies on gamma camera systems. H. Hassanpoor, R. Shirazi. Oral, 20<sup>th</sup> Annual Meeting of Iranian Society of Nuclear Medicine (October 26-28, 2016, Mazandaran, Iran).
- The Role of Astrocyte in Pattern Separation in the Hippocampus: A Modeling Approach. H. Hassanpoor, A. Fallah, A.H. Jafari, M. Raza. Oral, 6<sup>th</sup> International Conference of Cognitive Science (April 27-29, 2015, Tehran, Iran).
- Using Brain-Based Dimension of SCARF Model into Processes of Iranian Excellent of Project Management. M. Saidi, H. Hassanpoor, A. Tavakoli. Poster, 6<sup>th</sup> International Conference of Cognitive Science (April 27-29, 2015, Tehran, Iran).
- TNF $\alpha$  Secretion by Glial Cells and It's Role in Learning: A Modeling Approach. H. Hassanpoor, A. Fallah, M. Raza. Poster # PD121, 5<sup>rd</sup> Student and Research Festival, Baqiyatallah University of Medical Sciences (March 10-12, 2014, Tehran, Iran). [Published as a conference abstract in *Iranian Journal of Pediatrics*, abstract, Vol 24 (Suppl 1), Mar 2014. S27-S28.]
- Effect of BDNF and glutamate Secretion by Astrocyte on Learning and Memory in Hippocampus: A Modeling Approach. H. Hassanpoor, A. Fallah, M. Raza. Poster, 2<sup>nd</sup> Basic and Clinical Neuroscience Congress (December 18-20, 2013, Tehran, Iran).
- Effect of BDNF Secretion by Astrocyte on Learning and Memory: A Modeling Approach. H. Hassanpoor, A. Fallah, M. Raza. Oral, 2<sup>nd</sup> International Conference on Advances in Biomedical Engineering- ICABME'13 (September 11-13, 2013, Tripoli, Lebanon).
- Modeling the role of astrocyte in learning and memory: BDNF secretion. H. Hassanpoor, M. Raza. Poster # PD118, 4<sup>rd</sup> Student and Research Festival, Baqiyatallah University of Medical Sciences (March 6, 2013, Tehran, Iran).
- Modeling Inhibitory and Excitatory Effect of Astroglia in Synaptic Plasticity and Learning. H. Hassanpoor, A. Fallah, M. Raza. Oral, IEEE EMBS Conference on Biomedical Engineering- IECBES 2012 (December 17-19, 2012, Langkawi, Malaysia).
- Fuzzy controller indenter capable of simulating pressure sore on guinea pigs in a day. H. Hassanpoor, A. Fallah, G. Torkaman, A. Arghavan. Oral, 19<sup>th</sup> International Conference on Biomedical Engineering - ICBME 2012 (December 20-21, 2012, Tehran, Iran).

- Application of Astroglial Modeling in Human Neurological Disorders. H. Hassanpoor, M. Raza. Poster # PD135, *3rd Student and Research Festival*, Baqiyatallah University of Medical Sciences (March 6, 2012, Tehran, Iran).
- The role of astroglia in neural pathway: a modeling approach. H. Hassanpoor, F. Towhidkhah, M. Raza. Program # 767.16, Poster # E21, *Society for Neuroscience 41st Annual Meeting* (Nov 12-16, 2011, Washington, DC, USA).
- A model for neural pathway and simulation some glia capacities. H. Hassanpoor, F. Towhidkhah. *15<sup>th</sup> Iranian Conference on Biomedical Engineering* (Feb 12-13, 2008, Mashhad, IR Iran).
- Glass industrial. H. Hassanpoor, H.Zandi. *Student Chemistry Conference*. Zanzan, IR Iran. (Apr 1998).
- Physics of Laser. H. Hassanpoor. *Student Physics Conference*, Zanzan, IR Iran (Nov 1997).
- Around the Right Triangle. H. Hassanpoor. *Student Math Conference*, Zanzan, IR Iran (Dec 1996).

#### **Book Editor**

- Complete Solutions Guide for Engineering Circuit Analysis 7th Edition (Farsi)

#### **PATENTS AND INVENTIONS**

- A tactile system helpful in diagnosing arterial clogging and range in open surgery.  
H. Hassanpoor (45%), A. Abouei (45%), A. Arghavan (10%)  
Iranian patent, Date: Aug 24 2010, Patent #: 66275
- Cutting and pressure force applicator (for simulating bedsores)  
H. Hassanpoor, G. Torkeman, A. Fallah, A. Arghavan, G. H. Shabkhize Saadi  
Iranian patent, Date: May 2 2009, Patent #: 58603

#### **ADHOC REVIEW**

- *Medical Hypothesis*
- *Cell Biology International*

#### **Supervisor and Adviser**

- 2018: *Survey the novel machine learning methods and their applications*
- 2018: *survey the quantum computing for data processing*
- 2017: *Investigation of the big data tools and methods for data processing usages*
- 2017: *Design and construction of an electric stimulator belt to stimulate the muscles of the waist to increase the lumbar strengthen and prevent the humpbacked.*
- 2017: *Investigating the Effect of tDCS on Attention Improvement*

## RESEARCH PROJECTS

- 2017: *investigation and writing the road map of cognitive science on the 5-year horizon*
- 2013: *Biofeedback system using GSR and PPG channel (relaxation monitoring).*
- 2012: *Modeling of Astroglia and its role in producing Central Pattern Generator.*
- 2011: *Designing and constructing a Computer-Controlled Laparoscopic Instrument Capable of detecting hard object embedded in soft tissues.*
- 2010: *Designing and constructing a tactile system for research purposes.*
- 2009: *Control the pressure and position of robot by using of movement of man's hand.*
- 2008: *Designing and constructing a system simulating pressure sore on animal skin.*
- 2006: *Camera control using AVR and PC monitoring using VB.*

## GRANTS, HONORS and CERTIFICATES

- 2015: 13<sup>th</sup> International Management Conference
- 2015: National Workshop on Intellectual Property Management in Business for Small and Medium-Sized Enterprises (SMEs)
- 2015: The 4<sup>th</sup> International Innovation Networking Forum
- 2014: The First International Conference of Technology Commercialization (ICTC)
- 2014: Identification of Key Performance Indicator (KPI) and Key Result Indicator (KRI)
- 2013: Technical Supervisor of Medical Equipment Manufacturing Companies
- 2013: Neuro-Linguistic Programming(NLP) and Principles of Negotiation
- 2010: MiE Gamma-Camera System Certificate' DIACAM / SCINTRON VI '
- 2010: MiE Gamma-Camera System Certificate' ORBITER / SCINTRON VI'
- 2010: ISO 13485-2003 certificate
- 2005: Member of the organizing committee of Esfahan conference on industrial automation
- 1997: Member of the organizing committee of Zanjan student conference on physics

## PRESENTATIONS

- 2013: Possible Neuroscientist Candidates for The Next Nobel Prize in Physiology or Medicine: Optogenetics - Ed Boyden & Karl Deisseroth
- 2013: Louis Ranvier (1835–1922): The Contribution of Microscopy to Physiology and the Renewal of French General Anatomy
- 2012: Molecular mechanisms of memory
- 2012: Dopamine

- 2010: Neural spike sorting using mathematical morphology, multiwavelets transform and hierarchical clustering
- 2009: The emulation theory of representation
- 2009: Motor Imagery
- 2008: Functional modeling of neural-glia interaction
- 2008: A model for neural pathway and glia
- 2008: Introduction to chaos systems
- 2008: Control of the two-link leg by use of a chaos method
- 2007: Simulation of glia abilities and It's role in diseases
- 2006: Clustering and classification using fuzzy systems

## **WORK EXPERIENCE**

- Research Center of Development Advanced Technologies, Khaje Nasir al din Tusi, Tehran  
Dec 2015 – April 2018: Dean of the Signal Processing Department  
Jun 2015 – Dec 2015: Head of Bio Signal Processing Group  
Dec 2013 - Jun 2015: Head of Innovation Management & Technology Commercialization Office
- Research Center of Intelligent Signal  
July 2010 - Dec 2013: Project Manager and Researcher
- Partow Pardaze Ariya Co, Medical Instrument Engineering - MiE Co, Tehran  
July 2009 – March 2017: R&D Manager
- Member of Technical Standards Committee of "Implants for Surgery – Plasma-Sprayed Unalloyed Titanium Coatings on Metallic Surgical Implants –Part 1: General Requirements", 2015
- Gol Iran Co, Tehran  
Sep 2010 - Dec 2010: IT and Computer Engineer
- Mehdi Tools Co, Tehran  
Jun 2008 – Dec 2008: IT Manager
- Semnan Telecommunication Co, Semnan  
Jun 2005 - Aug 2005: Trainee, Practical Semester in IT, Mobil, Switching and Microwave