

Zahra Bahmani Dehkordi

Tarbiat Modares University, Tehran, Iran

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EDUCATION

- *Sep. 2012- Mar. 2018*
PhD of Cognitive Neuroscience, Artificial Intelligence
Institute for Research in Fundamental Science, Tehran, Iran
GPA: 18.67/20
Thesis title: The Neural Basis of Prefrontal Modulation of Extrastriate Visual Signals
Passed courses: Cognitive Science, Neuroscience, Introduction to Statistical Models of Neural Spike Train Data, Methods in Cognitive Science, Vision Psychophysics, Vision Science, Visual Attention, Neural Coding, Biostatistics, Consciousness
- *Sep. 2008- Jun. 2011*
M.Sc. of Artificial Intelligence
Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran
GPA: 17.41/20
Thesis title: Enhancement of Growing Hierarchical Self Organizing Map (with Application on Writer Identification)
Passed courses: Pattern Recognition, Artificial Neural Network, Advanced Neural Network, Image Processing, Machine Vision, Robotics, Fuzzy System, Evolutionary Computing
- *Sep. 2004- Sep. 2008*
B.Sc. of Software Engineering
Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran
GPA: 17.65/20 (Ranked 2nd)
Thesis title: Intelligence Typing Using Statistical Methods
- *Sep. 2006- Sep. 2010¹*
B.Sc. of Information Technology Engineering
Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran
GPA: 17.53/20
- *Sep. 1999- Jun. 2004*
High School Diploma in Mathematics and Physics
Pajohesh School, Shahrekord, Iran
GPA: 19.26/20

LAB VISITS

- *USA Nov. 2016- Aug. 2017*
Dr. Behrad Noudoost Lab, Neuroscience Department, Montana State University, Bozeman, USA.
- *Germany Nov. 2015- Sep. 2016*
Prof. Stefan Treue's Lab, Cognitive Science Group, Goettingen University, Germany.

¹ Qualified students in Amirkabir University can study two majors concurrently.

WORK EXPERIENCES & TEACHING

- **Biomedical Engineering Group, Department of Electrical & Computer Engineering, Tarbiat Modares University (TMU),Sep. 2019- now**
Assistant professor
Field of Study: Cognitive neuroscience
- **Department of Signal Processing, Research Center for Development of Advanced Technologies,Sep. 2018- Sep. 2019**
Senior Researcher/Project Manager
Field of Study: Stress Detection based on Brain Signals including FNIRS and EEG Signals & Futurology of Cognitive Technology
- **Bio-signal Processing Group, Research Center of Intelligent Signal Processing (RCISP).....Jun.2011- Sep. 2012**
Senior Researcher/Project Manager
Field of Study: Stress Detection based on Thermal Video Sequences
- **Neuromuscular Systems Lab, Biomedical Engineering Department, Amirkabir University of Technology Jun.2011- Jun. 2012**
Researcher
Field of Study: Neuroscience of Free Will
- **Sport Medicine Research Center, Neuroscience Institute, Tehran University of Medical Science..... May.2011- Feb. 2012**
Researcher & Developer
- **Department of Computer Engineering & Information Technology, Amirkabir University of Technology..... Sep.2007- Dec. 2007**
Electronics Circuits, Teacher Assistance

RESEARCH INTERESTS

- Neural Coding & (System) Neuroscience
- Neural Synchrony and Oscillations of Brain
- Computational Neuroscience
- Neural basis of Working Memory & Visual Attention
- Machine Learning and Artificial Neural Networks
- Text, Image and Video Processing

PUBLICATIONS

Journal Articles:

1. E. Rezayat, MR. Abolghasemi, K. Clark, Z. Bahmani, B. Noudoost, "Frontotemporal coordination predicts working memory performance and its local neural signatures", accepted by Nature Communication, 202.
2. Shafaei, R., Bahmani, Z., Bahrami, B. Vaziri, M. "Effect of perceived interpersonal closeness on the joint Simon effect in adolescents and adults" *Scientific Report*, Vol. **10**, No. 18107, 2020.
3. Z. Bahmani, MR. Daliri, Y. Merrikhi, K. Clark, B. Noudoost, "Working Memory Enhances Cortical Representations via Spatially-Specific Coordination of Spike Times " *Neuron*, Vol. 97, No. 4, 967-979, 2018.

4. W. Nesse, Z. Bahmani, B. Noudoost “ Differential contributions of inhibitory subnetwork to visual cortical modulations identified via computational model of working memory”, submitted to *Frontiers in Computational Neuroscience*
5. Z. Bahmani, P. Schwedhelm, MR. Daliri, S. Treue, B. Noudoost, "PFC Modulates Feature Maintenance with in MT Cortex via Oscillations " under preparation
6. M. Saidi, Z. Bahmani, M. danesh, "Stress Detection through Thermal Facial Images Inspired by Characteristics of Psychophysiological Signals", *Journal of Military Medicine*, Vol. 19, No 1, 3-12, 2017
7. K. Hamedani, Z. Bahmani, A. Mohammadian, “Spatio-Temporal Filtering of Thermal Video Sequences for Heart Rate Estimations”, *Expert Systems with Applications*, Vol. 54, 88-94, 2016
8. Z. Bahmani, Sh. Gharibzadeh, “Brain Activity Preceded Awareness in Libet’s Experiment is Probably Related to Unconscious Inhibition in Initiation of Doing Action”, *The Journal of Neuropsychiatry and Clinical Neurosciences*, Vol. 25, No. 1, E34-E34, 2013

Book Chapter:

1. Z. Bahmani, K. Clark, Y. Merrikhi, A. Mueller, W. Pettine, M. Vanegas, T. moore, B. Noudoost, “Prefrontal Contributions to Attention and Working Memory”, In: . *Current Topics in Behavioral Neurosciences*. Springer, Berlin, Heidelberg, 2019
DOI: https://doi.org/10.1007/7854_2018_74

Conference Articles:

1. M. Prtoo, M.Zarei, I. Vanegas, MR. Daliri, Z. Bahmani, B. Noudoost, “Frontal Eye Field Inactivation Modulates Beta Rhythms within V4 Cortex”, *Society for Neuroscience (SFN), USA* , 2019.
2. E. Rezayat, MR. Abolghasemi, K. Clark, Z. Bahmani, B. Noudoost “ PFC-IT Coupling Underlies Object Working Memory ”, *Neuroscience Symposium, Sharif University, Tehran, Iran*, 2019.
3. Z. Bahmani, MR. Daliri, B. Noudoost “Visuospatial Working Memory Modulates Alpha-Beta Rhythms within MT Cortex of Macaque Monkey”, *Basic and clinical neuroscience 7th Congress, Tehran, Iran*, 2018.
4. B. Noudoost, W. Nesse, Z. Bahmani “Top down Activation of Oscillating Model Microcircuits Can Account for Working Memory Enhancement of Bottom up Firing Rate Signals Area MT Responses”, *Society for Neuroscience (SFN) , SanDiego, USA* , 2018
5. E. Rezayat, MR. Abolghasemi, K. Clark, Z. Bahmani, T. Moore, B. Noudoost,” The Impact of Prefrontal Persistent Activity on Inferotemporal Activity and Object Information Maintenance”, *Society for Neuroscience (SFN) , SanDiego, USA*, 2018
6. Z. Bahmani, Y. Merrikhi, K. Clark, M.R. Daliri and B. Noudoost "Maintenance of Spatial Information Enhances Visual Processing via Phase Modulation of Ongoing Brain Rhythm", *Society for Neuroscience (SFN) , Washington, USA*, 2017
7. Z. Bahmani, M.R. Daliri, Y. Merrikhi, M. Parsa and B. Noudoost "Maintenance of Spatial Information Modulates Beta Rhythms within MT Cortex" *Society for Neuroscience (SFN) , SanDiego, USA*, 2016
8. Z. Bahmani, M. Etemadi, MR. Daliri, R. Liu, S. Treue, " The Role of Neural Synchrony and Oscillations in Feature-Based Attention in the Primary Visual Cortex of the Macaque Monkey", *11th Goettingen meeting of the German Neuroscience Society, Goettingen, Germany*, 2015
9. R. Shafaei, Z. Bahmani, V. Safari, M. Vaziri, B. Bahrami, “How Does Intimacy Affect Social Simon effect?”, *FENS Fall Brain Conference, Copenhagen, Denmark, 5-8 October 2014*
10. M. Ghoddoosi, Z. Bahmani, A. Mohammadian, "Deception Detection by Using Face Thermal Video of Subjects", *20th Iranian Conference on Biomedical Engineering, Mashhad, Iran, 2013 (in Persian)*
11. Z. Bahmani, R. safabakhsh, “A New fast Growing Hierarchical Self-Organizing Map”, *16th Computer Society of Iran Conference, Tehran, Iran, 2011(in Persian)*
12. Z. Bahmani, G. Ghiasi, R. Safabakhsh, “Speed Increasing of Writer Identification Systems Using Growing Hierarchical Self-Organizing Map”, *6th Machine Vision and Image Processing Conference, Isfahan, Iran, 2010 (in Persian)*

WORKSHOPS & COURSES

- “Eighth International Workshop on Statistical Analysis of Neuronal Data (SAND8)”, University of Pittsburgh, Pittsburgh, PA, USA, May 31 – June 2, 2017
- “Primates as Laboratory Animals”, Gottingen, Germany, 14 April, 2016
- "School on Complex Network and Application to Neuroscience", Organized by ICTP-SAIFR, Sao Paulo, Brazil, 28, Sep.-16 Oct. 2015
- “Laboratory Animal Science Course on Primates”, Gottingen, Germany, 23 October-27 November 2015
- "Winter School in Quantitative System Biology", Organized by ICTP and ICTS, Trieste, Italy, 1-12 Dec. 2014
- “Introduction to International Organization and Institutions of Neuroscience and Their Financial, Educational and Research Opportunities”, Organized by Iranian Neuroscience Society, August 07, 2014
- “Workshop on Cognitive Science and Cognitive Modeling” Organized by Tehran University and IPM, Tehran, Iran, 21-24 April 2014
- “Modern Concept of Science Plagiarism and Ethics”, Reza Mansouri, IPM, Tehran, Iran, November 28, 2012
- “An Exploration in Cognitive Science”, Organized by Amirkabir University of Technology, December 2010

AWARDS & HONORS

- Received the award of best paper in Iran, 2018
- Being exempted from PhD program entrance exam as an "Exceptional Talent", September 2011
- Being exempted from M.Sc. program entrance exam as an "Exceptional Talent", September 2008
- Ranked 2nd among bachelor students in Computer Engineering of the same enrolment year.
- Accepted Honorably in Information Technology bachelor degree program in department of CEIT, Amirkabir University of Technology without entrance exam.
- Honored as "Exceptional Talent" in Computer Engineering and Information Technology
- Ranked 372th in nationwide university entrance exam among more than 350,000 participants for engineering and mathematical science
- Received several golden medals in national and local swimming competitions

OTHER ACTIVITIES & INTERESTS

- Swimming
 - Awarded several golden medals in national and local swimming competitions
 - A member of Amirkabir university swimming team
- Wall Climbing & mountain climbing
 - A competitor in national rock climbing competitions
 - A member of Amirkabir university rock climbing team
 - Climbed several mountains in Iran including Damavand, Zardkoh, ...
- Reading
- Team working