

FATEMEH BAKOUIE

ASSISTANT PROFESSOR
 INSTITUTE FOR COGNITIVE AND BRAIN SCIENCES
 SHAHID BEHESHTI UNIVERSITY

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EDUCATION

1995-1999 National Organization for Development of Exceptional Talents (NODET) High School, Sari
 1999-2003 BSc in Electrical Engineering, Shahid Beheshti University
 2004-2007 MSc in Biomedical Engineering, Amirkabir University of technology (Tehran Polytechnic)
 2008- 2013 PhD in Biomedical Engineering, Amirkabir University of technology (Tehran Polytechnic)

VISITING POSITION

- ✓ Department of Clinical Neurophysiology, Neuroscience Campus Amsterdam, Vrije University (2012)

PUBLICATIONS

A. Journals

- . SS Hashemikamangar, S Gharibzadeh, **F Bakouie**^{*}, Small-world Structure in Children's Featured Semantic Networks, *Caspian Journal of Neurological Sciences* 7 (4), 185-192, 2021.
- . SS Hashemikamangar, S Gharibzadeh, **F Bakouie**^{*}, Resilience in semantic networks: A new approach for studying language impairment in Alzheimer's disease, *International Journal of Nonlinear Analysis and Applications* 12 (2), 1563-1566, 2021.

- . A Faghfour Azar, **F Bakouie***, MH Mahdavi Adeli, R Radfar, Analysis of the effects of social capital on the strategy of observing social distance and controlling the COVID-19 pandemic with a system dynamics approach, Iran J Health Insur 4 (2), 128-41, 2021.
- . SS HashemiKamangar, S Gharibzadeh, **F Bakouie***, Multi-stability in a Dynamic Model of Language Development, Int. J. Nonlinear Anal. Appl 11 (2), 229-235, 2020
- . P Yazdan-Shahmorad, N Sammaknejad, **F Bakouie***, Graph-Based Analysis of Visual Scanning patterns: A Developmental Study on Green and normal images, Scientific Reports 10 (1), 1-11, 2020
- . S Nofallah, **F Bakouie***, A Memari, S Gharibzadeh, An Exploratory Model for Face Recognition Problem in Autism: An Artificial Neural Network Approach, Journal of Neurodevelopmental Cognition, 2019.
- . A. Faghfour Azar, **F. Bakouie***, MH. Mahdavi Adeli, R. Radfar, A dynamical model of social capitals Social Capital Managemen, 2019
- . S.Ataei, N.Attar, S.Aliakbary, **F.Bakouie**, *Graph theoretical approach for screening autism on brain complex networks*, SN Applied Sciences 1 (9), 1122, 2019.
- . S. Kamangar, **F. Bakouie***, S. Gharibzadeh, *Bifurcation Theory Approach to Neuro-Developmental Language Impairment in Autistic Children*, The Malaysian journal of medical sciences: MJMS 25 (4), 142, 2018
- . A. Mohseni, S. Gharibzadeh, **F. Bakouie***, “*The effect of network structure on desynchronization dynamics*”, Communications in Nonlinear Science and Numerical Simulation, 2018.
- . S. Hashemi Kamangar, Z. Moradimanesh, S.Mokhtari & **F. Bakouie***, “*A Dynamical System Approach Explaining the Process of Development by Introducing Different Time-scales*”, International Journal of Neuroscience, 2018.
- . A. Saeidi, M. Jannesar, S. Gharibzadeh, **F.Bakouie*** “*Coexistence of Stochastic Oscillations and Self-Organized Criticality In a Neuronal Network: Sandpile Model Application*”, Neural Computation, 2018.
- . B. Alipour, K. Arbabifard, S.Hashemi, S.Gharibzadeh, **F.Bakouie***, “*Selective Attention Compensates Detrimental Effect of Auditory Noise on Performance in Posner Experiment*”, Advances in Systems Science and Applications, 2018
- . A. Mohseni, S. Gharibzadeh, **F. Bakouie***, “*The role of driver nodes in managing epileptic seizures: Application of Kuramoto mode*” Journal of Theoretical Biology 2017
- . **F.Bakouie***, M. Pishnamazi, R. Zerartti, S. Gharibzadeh “*Scale-freeness of dominant and piecemeal perceptions during binocular rivalry*”, cognitive neurodynamics 2017
- . M. Sadeghi, R. Khosrowabadi, **F. Bakouie**, H. Mahdavi, C. Eslahchi “*Screening of autism based on task-free fMRI using graph theoretical approach*”, Psychiatry Research: Neuroimaging 2017
- . M. Hajizadeh, F. Rajabi Vishkaie, **F. Bakouie***, S. Gharibzadeh, “*Modeling the outbreak of an infectious disease on a heterogeneous network*” Advances in systems sciences and applications 2016
- . SG FR Vishkaie, **F Bakouie***, “*A Neural Network model of generalization problem in autistic brains*” Journal of Multidisciplinary Engineering Science and Technology (JMEST) 2016.

- . T Abbasi, M Falahi, **F Bakouie***, S Gharibzadeh, “*Multisensory Integration Using Dynamical Bayesian Networks*”, *Frontiers in Computational Neuroscience* , 2015.
- . **F.Bakouie**, S Gharibzadeh, F Towhidkhah, “*A network theory view on thalamocortical loop*”, *Neurophysiology* 2014.
- . **F.Bakouie**, S.Gharibzadeh, F.Towhidkhah, “*On the robustness of consciousness neural correlates*”, *Scientia iranica*, 2013.
- . F.Rajabi, S.Gharibzadeh, **F.Bakouie**, “*Common cold outbreak: a network theory view*”, *Communications in Nonlinear Science and Numerical Simulation*, 2013.
- . **F. Bakouie**, S. Gharibzadeh, F.Towhidkhah, “*A network theory view on thalamocortical loop*”, *Neurophysiology* 2013.
- . **F. Bakouie**, S. Gharibzadeh, F.Towhidkhah, “*Does ‘dynamic core’ approach help to manage autistic behavioral disorders?*”, *The Journal of Neuropsychiatry and Clinical Neurosciences*, 2010.
- . **F. Bakouie**, S. Gharibzadeh, “*Towards a unifying hypothesis for schizophrenia and autism visual fragmentation*”, *The Journal of Neuropsychiatry and Clinical Neurosciences*, 2010.
- . S.Zendehrouh, **F. Bakouie**, S. Gharibzadeh, “*Modeling Schizophrenia Using Nonlinear Delayed Differential Equations*”, *Computers in Biology and Medicine*, 2009.
- . **F. Bakouie**, S. Zendehrouh, S.Gharibzadeh, “*Does a kind of over-fitting occur in the brain of autistic patients?*”, *The Journal of Neuropsychiatry and Clinical Neurosciences*,2008
- . Rahafrooz, A., Fallah, A., Jafari, A. H., **Bakouie, F.**, Zendehrouh, S., & Gharibzadeh, S. (2008). “*Saccadic and smooth pursuit eye movements: Computational modeling of a common inhibitory mechanism in brainstem.*” *Neuroscience letters*, 448(1), 84-89.
- . S. Zendehrouh, **F. Bakouie**, S. Gharibzadeh, “*Global versus local perspective on schizophrenia*”, *The Journal of Neuropsychiatry and Clinical Neurosciences*,2007
- . M.Jegarian, **F. Bakouie**, M. Bahrami, H. Pouretamad, “*Interaction of Human and socio- assistive Robots for improving attention in autistic children*” . *Tabriz University journal of Mechanical Engineering (in Persian)* 2017.

B. Conferences

- . Amin Faghfour Azar, **Fatemeh Bakouie***, et.al., A Dynamical model for Identifying effective factors of social trust, 7th Congress of the Iranian Psychological Association: Cognition and Technology, 2019
- . Setareh Mokhtari , **Fatemeh Bakouie**, Mohammad Kheirkhah, The role of positive emotions in resilience: a cognitive perspective, 1st Iranian Congress of Positive Psychology, 2019

- **Fatemeh Bakouie***, Shahriar Gharibzadeh, “*A complex network approach to neural correlates of consciousness*”, Sixth International Conference of Cognitive Science (ICCS 2015)
- Faranak Rajabi, Sanaz Khosravani, **Fatemeh Bakouie***, Shahriar Gharibzadeh, “*Generalization problem in autistic brains: Artificial Neural Networks approach*”, Sixth International Conference of Cognitive Science (ICCS 2015).
- Majid Jegarian, Elham Irvani, **Fatemeh Bakouie***, Hamidreza Pouretamad, “*Decision making model for interaction of humanoid robot and children with autism*”, Sixth International Conference of Cognitive Science (ICCS 2015).
- **Fatemeh Bakouie**, Mohammad Hassan Moradi, “*Genetic Regulatory Network Modeling Using Network Component Analysis Mutual Information*”, (In Persian) ICEE2007, 15th Conference on Electrical Engineering, Iran, Tehran, Amirkabir university of technology.
- **Fatemeh Bakouie**, Mohammad Hassan Moradi, “*Genetic Regulatory Network Modeling Using Network Component Analysis and Fuzzy Clustering*”, IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology: CIBC 2007.
- **Fatemeh Bakouie**, Mohammad Hassan Moradi, “*A comparison of clustering methods affection on genetic regulatory networks*”, Cairo International Biomedical Engineering Conference 2006 (CIBEC'06).
- **Fatemeh Bakouie**, Mohammad Hassan Moradi, “*Application of Variable Neighborhood Search (VNS) methods in microarray data clustering*”, (In Persian) ICEE2006, 14th Conference on Electrical Engineering, Iran, Tehran, Amirkabir university of technology.

AWARDS AND GRANTS

- ✓ Awarded Grant from Cognitive Sciences and Technologies Council for the project entitled “dynamic modeling of Persian Language acquisition”. 2017
- ✓ Awarded Grant from Cognitive Sciences and Technologies Council for the project entitled “Graph based analysis of sensory integration network during development”, 2020.
- ✓ 2008: Ranked 1st in the PhD entrance exam, Department of Biomedical Engineering, Amirkabir University of Technology
- ✓ 2007: Ranked 1st among the graduate students, Department of Biomedical Engineering, Amirkabir University of Technology
- ✓ 2002: Ranked 4th among students of undergraduate students, Department of Electrical Engineering, Shahid Beheshti university of Tehran
- ✓ Admitted to the primary competition of the National Scientific Olympiads of Physics in Iran (1998)
- ✓ Admitted to the primary competition of the National Scientific Olympiads of Computers in Iran (1998).

PROFESSIONAL EXPERIENCE

TEACHING EXPERIENCE

- Complex Models in Cognitive Sciences: Shahid Beheshti University (2015-Present)
- Cognitive Models and theories (for physics student, complex systems department): Shahid Beheshti University (2016-present)
- Dynamical Systems in cognitive sciences: Shahid Beheshti University (2014-present)
- Pulse Techniques: Amirkabir University of technology (2013)
- Research methodologies: Amirkabir University of technology (2013)
- Seminar course: models of consciousness, Amirkabir University of technology (2010)
- Engineering Mathematics, Technical college of Dr Shariati (2008)
- Engineering Mathematics, Technical college of Dr Shariati (2007)
- Electrical Circuit Lab, Technical college of Dr Shariati (2007)
- Electrical Circuit II Technical college of Dr Shariati (2006)

PROJECT/THESIS SUPERVISOR /ADVISOR OF:

- ✓ Somaye Sadat HashemiKamngar, Dynamical modeling of language acquisition in children, PhD thesis, 2021.
- ✓ Zahra Kazemi, Agent-based modeling in an organization with organized anarchy, Msc thesis, 2019.
- ✓ Padide Yazdan, The Developmental Pattern of Visual Scanning using Graph Theory: comparison between green and normal images, Msc thesis, 2019.
- ✓ Alireza Saeidi, Modeling Brain networks Evolution Based on Information Theory, master thesis , 2017.
- ✓ Soroush Karimi, social leadership in complex network, Msc thesis, 2016.
- ✓ Ali Mohseni, Modeling epilepsy in brain networks, Msc thesis, 2015.
- ✓ Ardalan Khaleghi, Modeling ion channels in heart cells, Msc thesis 2016.
- ✓ Mojgan Hajizadeh, , modeling SARS outbreak in a social network, Bsc thesis, 2014.
- ✓ Farank Rajabi, modeling common cold outbreak in a social network, Bsc thesis, 2012.
- ✓ Behnaz pournartip, modeling the encoding and retrieval of memory using hippocampus microcircuit, Msc thesis,2010-2012.
- ✓ Samaneh Seyedi, modeling attention deficit in autism, Bsc thesis,2009-2010
- ✓ Zahra Shams, modeling thalamocortical loop, Bsc thesis,2009-2010
- ✓ Elnaz Sadeghi, simulation autism disorder with artificial neural networks, Bsc thesis,2009
- ✓ Biomedical Engineering center of excellence: studying and modeling autism disorder and proposing

solutions to behavioral treatments

EDITORIAL DUTIES AND SOCIETY FELLOWS

- ✓ Head of Computational Cognitive and Brain sciences Department, Shahid Beheshti University, (2020-present).
- ✓ Founder and head of the Innovation Center for Brain and Cognitive Sciences, Science and Technology Park, Shahid Beheshti University (2020-present).
- ✓ Lecturer for selected students in Biology Olympiads (2021).
- ✓ Journal Reviewer, Cognitive Neurodynamics.
- ✓ Journal Reviewer, Journal of Theoretical Biology.
- ✓ Journal Reviewer, Frontiers in computational neurosciences.
- ✓ Journal reviewer, Physics Letter a.
- ✓ Journal reviewer, Journal of signal and data processing.
- ✓ Reviewer- 4th & 5th International Conference of Cognitive Science.
- ✓ Chief woman - 4th International Conference of Cognitive Science.
- ✓ Member of Organizing Committee- Conference of computational neurosciences, Amirkabir University of technology, 2010.

RESEARCH INTERESTS

- . Complex systems
- . Computational cognitive science
- . Networks of the Brain
- . Dynamical systems Theory

PhD Thesis

- Computational Development of Dynamic Core Hypothesis in Consciousness