

Curriculum vitae

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Hamidreza Hakim

Birth Date:1988

Address: Stochastic Analysis Laboratory, Department of Computer and Information Engineering, Amirkabir University, Hafez Ave, Tehran, Iran

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Education

2014–Now: Amirkabir University of Technology (Tehran Polytechnic) Tehran, Iran

PhD Candidate of Artificial Intelligence, GPA: 18.06 out of 20

Dissertation: Dynamic Functional Connectivity in fMRI

2010–2013: Amirkabir University of Technology (Tehran Polytechnic) Tehran, Iran

M.sc Artificial Intelligence, GPA: 17.02 out of 20

Thesis: Performance Improvement of Asynchronous Brain-Computer Interface

2006–2010: Isfahan University Isfahan, Iran

B.Sc. Hardware Engineering, GPA: 17.2 out of 20

Research Interests

- Brain Functional Connectivity
- Multivariate Time Series Models
- Probabilistic Graphical Models
- Complex Network Analysis

Awards and Honors

- Ranked 1st among all undergraduate students in the Department of computer Engineering, Isfahan university.
- Accepted book exam entitled "Principles of Neural Science", IPM Institute, Tehran.

Teaching Experience

- Advance fMRI analysis workshops (Imam Khomeini hospital)
- Data mining competition of Fanavard, evaluator and jury member (Sharif university)
- Stochastic process, teacher assistance (Amirkabir university)
- Signals and systems, teacher assistance (Amirkabir university)
- Computer basics (Amirkabir university)

Experiences

- Research on linear and nonlinear time series modeling
- Implementation of several projects related to Page Rank analysis and Community Detection in Complex Networks
- Implementation of a POS tagging system
- Implementation of a Movement Brain-Computer Interface system based on EEG signal
- Implementation of a Self-paced BCI system based on Movement imaginary
- Implementation of several Dictionary Learning and Sparse Analysis methods
- Implementation of a Speech Sources Separation System based on Blind Source Separation in Time-Frequency Space.
- Proposing a new Ensemble Learning method for detection and identification of Movement Imaginary in EEG signal
- Proposing a new dimension reduction method for EEG data based on Supervised and Semi-supervised Non-Negative Matrix Factorization.
- Design and implementation of a BCI system using AVR microcontroller
- Implementation of several Common Spatial Pattern methods for EEG data
- Continuous EEG modeling by Hidden Markov Model
- Dynamic multi-objective optimization based on Genetic approaches
- Lecturer in Manifold Learning Methods
- Implementation of a Real-time Windows Driver with only one microsecond precision

Courses

- Brain Mapping based on MRI and fMRI
- Wavelet Analysis
- Optimization
- Statistical Machine Learning
- Probabilistic Graphical Models
- Big Data Mining
- Statistical Natural Language Processing
- Statistical Pattern Recognition
- Blind Source Separation and Sparse Analysis
- Stochastic Process
- Digital Signal Processing
- Digital Image Processing
- Speech Processing

- Machine Learning
- Evolutionary Processing

Publications

- H. Hakim, M. Amirmazlaghani, “Maximum Likelihood Estimation of Generalized Linear Models with Generalized Gaussian residuals,” 2nd International Conference on Signal Processing and Intelligent Systems, pp.481-486, 2016.
- H. Hakim, M. Homayoun, “Optimizing spatio-spectral filters by motor imagery pattern quantification in self-paced Brain Computer Interface,” Proc.IEEE International Symposium on Telecommunications, pp.481-486, 2014.

Skills

- Java, Python, Matlab, Advance C++ Programming
- FSL – SPM Toolbox
- HTK and HMM Murphy Toolbox
- Weka
- Gephi

References

Prof. Maryam Amirmazlaghani. Laboratory of Stochastic Analysis, Department of Computer Engineering, Amirkabir university of Technology, Tehran, Iran.

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Prof. Hamidreza Amindavar. Department of Electrical Engineering, Amirkabir university of Technology, Tehran, Iran.

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Prof. Mohammad Homayounpour, Laboratory for Intelligent Multimedia Processing, Department of Computer Engineering, Amirkabir university of Technology, Tehran, Iran.

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