

## Curriculum Vitae



Last name: **Kavousi**  
 First name: **Kaveh**  
 Date of birth: **March. 04, 1974**

### Positions:

- Assistant Professor of Systems Biology and Bioinformatics, Institute of Biochemistry and Biophysics (IBB), University of Tehran, Tehran, Iran.
- Head of Bioinformatics department, Institute of Biochemistry and Biophysics (IBB), University of Tehran, Tehran, Iran.

### Contact Info

Institute of Biochemistry and Biophysics (IBB), Department of Bioinformatics, Laboratory of Complex Biological Systems and Bioinformatics (CBB), University of Tehran, Tehran, Iran.  
 P.O.Box: 13145-1384.

**E-mail:** [kkavousi@ut.ac.ir](mailto:kkavousi@ut.ac.ir)

**Web page:** <http://bioinformatics.ut.ac.ir/node/3>

**Website:** <http://cbb.ut.ac.ir>

Office: Tel: (+98)-21-66969261, (+98)-21-61113448  
 Fax: (+98)-21-66404680

### Education

Degree	Field of Study	Institute
Ph.D. (2007-2012)	Artificial Intelligence & Bioinformatics	School of Electrical and Computer Engineering, Faculty of Engineering, University of Tehran, Iran
M.Sc. (1998-2001)	Artificial Intelligence and Robotics	School of Electrical and Computer Engineering, Faculty of Engineering, University of Tehran, Iran
B.Sc. (1992-1997)	Computer Hardware Engineering	School of Computer Engineering, Amir Kabir University of Technology (Poly Technic of Tehran), Tehran, Iran

### Research Interests

- Bioinformatics & Computational Biology
- Complex Systems and Complex Networks analysis
- Data Mining and Sensor/Data/Information Fusion

- Distributed Systems
- Intelligent Agents, Multi Agent environments, and Distributed AI
- Information Coding/Cryptography based on biological systems

## Teaching Experience

### **Institute of Biochemistry and Biophysics (IBB), University of Tehran**

**Lecturer**, September 2012 – present

Teaching Advanced Algorithms, Advanced Programming, Machine Learning, Biological Sequences Analysis, and Algorithms in Bioinformatics for bioinformatics PhD candidates.

### **School of Electrical and Computer Engineering, University of Tehran**

**Lecturer**, September 2012 – 2015

Teaching Data / Information Fusion for graduate students.

### **School of Electrical and Computer Engineering, University of Tehran**

**Lecturer**, September 2012 – 2015

Teaching Data / Information Fusion for graduate students.

### **Department of Algorithms & Computation, Faculty of Engineering, Sciences College of Engineering, University of Tehran**

**Lecturer**, September 2012 – current

Teaching Distributed Systems for graduate students.

## Course Titles

- Advanced Algorithms in Bioinformatics
- Biological Sequence Analysis
- Machine Learning
- Complex Dynamical Networks
- Biological Databases
- Distributed Systems
- Discrete Mathematics
- Advanced Programming
- Data Structures and Algorithm Design

## Theses

- Automated Classification of Protein Domains based on Information Fusion Theory, Ph.D. *Thesis (2010)*, School of Electrical and Computer Engineering, Faculty of Engineering, University of Tehran, Iran.

- Improving the Intelligent Methods of Information Fusion Software Agent on Internet, *M.Sc. Thesis (2001), School of Electrical and Computer Engineering, Faculty of Engineering, University of Tehran, Iran.*
- Designing and Developing of Network Card for X.25 Networks and implementation of the three network lower layers, Physical Layer, Data Link Layer, and Network Layer, *B.Sc. Thesis (1998) Department of Computer Engineering, Amir Kabir University of Technology, Tehran, Iran.*

### Publications (Journal papers)

- A. A. G. Ghahramani, A. M. A. Hemmatyar, **K. Kavousi**, "A Network Model for Vehicular Ad Hoc Networks: An Introduction to the Obligatory Attachment Rule", *IEEE Transactions on Network Science and Engineering (TNSE)*, 3, 2, 82-94, 2016.
- S. Babakhanbak, **K. Kavousi**, F. Farokhi, "Application of a time delay neural network for predicting positive and negative links in social networks", *Turkish Journal of Electrical Engineering and Computer Sciences*, 24(4), 2825-2837, 2016.
- Z. Mousavian, S. Khakabimamaghani, **K. Kavousi**, A. Masoudi-Nejad, "Drug–target interaction prediction from PSSM based evolutionary information", *Journal of pharmacological and toxicological methods* 78, 42-51, 2016.
- Z. Mousavian, **K. Kavousi**, A. Masoudi-Nejad, "Information theory in systems biology Part I: Gene regulatory and metabolic networks", *Seminars in cell & developmental biology*, 2015.
- M. S. Atri, A. A. Saboury, A. A. Moosavi-Movahedi, **K. Kavousi**, S. Ariaeenejad, "Effects of zinc binding on the structure and thermal stability of camel alpha-lactalbumin" *Journal of Thermal Analysis and Calorimetry*, 2014.
- Y. Asgari Nezhad, B. Tokhmechi, A. Kamkar Rouhani, S. Sherkati, **K. Kavousi**, A. Jamali, "A combined Parzen-wavelet approach for detection of vuggy zones in fractured carbonate reservoirs using petrophysical logs", *Journal of Petroleum Science and Engineering* 119, 1-7, 2014.
- S. Ariaeenejad, A. A. Moosavi-Movahedi, **K. Kavousi**, M. R. Dayer, J. Hong , "The Species and Heme Pocket Properties of Sturgeon Hemoglobins Upon Interaction with N-dodecyl Trimethylammonium Bromide", *Protein and peptide letters* 21 (2), 171-178, 2014.

- **K. Kavousi**, M. Sadeghi, B. Moshiri, B. Araabi, A. A. Moosavi-Movahedi, "Evidence Theoretic Protein Fold Classification Based on the Concept of Hyperfold", Elsevier Mathematical Biosciences, 240, 2, 148-160, 2012.
- Sh. Ariaeenejad, M. Habibi-Rezaei, **K. Kavousi**, A. A. Moosavi-Movahedi, "Biochemical Characterization of Hemoglobins from Caspian Sea Sturgeons (*Acipenser persicus* and *Acipenser stellatus*) ", Springer Cell Biochemistry and Biophysics, 62, 73-81, 2012.
- H. Sepasi Tehrani, A.A. Moosavi-Movahedi, H. Ghourchian, M. S. Atri, Sh. Ariaeenejad, **K. Kavousi** and A.A. Saboury "Effect of Compatible and Non-compatible Osmolytes on the Enzymatic Activity and Thermal Stability of Bovine Liver Catalase", Journal of Biomolecular Structure and Dynamics, 31(12), 1440-1454, 2013.
- Sh. Ariaeenejad, Sh Jamili, M. Habibi Rezaei, M. R. Fatemi, N. Poursasan, **K. Kavousi**, A. A. Moosavi-Movahedi, "Computational Analysis between two different hemoglobins from Caspian Sea sturgeons (*Acipenser persicus* and *Acipenser stellatus*) induced by n-dodecyl trimethylammonium bromide", The FASEB Journal, 26, 983, 2012.
- **K. Kavousi**, B. Moshiri , M. Sadeghi, B. Araabi, A. A. Moosavi-Movahedi, "A Protein Fold Classifier Formed by Fusing Different Modes of Pseudo Amino Acid Composition via PSSM", Elsevier Computational Biology and Chemistry, 35, 1-9, 2011.
- **K. Kavousi**, M. Sadeghi, B. Moshiri, B. Araabi, A. A. Moosavi-Movahedi, "An Information Theoretic and Fusion Approach to Protein Secondary Structure Class Prediction Based on Sequence Extracted Features", Protein & Peptide Letters, under review, 2012.
- Sh. Ariaeenejad, M. Habibi, **K. Kavousi**, A. A. Moosavi-Movahedi, "Denaturation and intermediates study of two sturgeon hemoglobins by n-dodecyl trimethylammonium bromide", International Journal of Biological Macromolecules , 53, 107-113, 2013
- Sh Ariaeenejad, **K. Kavousi**, M. Habibi, A. A. Moosavi-Movahedi, "A comparative study on aggregation and thermal denaturation of hemoglobin components from Caspian Sea sturgeon (*Acipenser persicus* and *Acipenser stellatus*): Chemometric study", Elsevier Colloids and Surfaces B: Biointerfaces, 2013.
- Sh Ariaeenejad, **K. Kavousi**, "DNA and Proteins: music of life ", Journal of Science Cultivation, 2010, Tehran, Iran.
- **K. Kavousi**, B. Moshiri, "An Architectural Design of an Adaptive Intelligent Agent for Search of Commercial Information, Using the Theory of Information Fusion", Global Media Journal, Volume 1, Issue 4, 2007.

- **K. Kavousi**, B. Moshiri, "Improving the Intelligent Methods of Information Fusion Agent", Journal of Faculty of Engineering (Special issue: Electrical and Industrial Engineering) University of Tehran, Vol.38, No.1, May 2004, PP. 85-98.
- B. Moshiri, **K. Kavousi**, "Information / Data Fusion and Its Applications in Intelligent Decision Making Process, parts 1 and 2 ", *Intelligent Industry Magazine*, Oct. 2001, Tehran, Iran.

## Conference papers

- Sh. Ariaeenejad, A. A. Moosavi Movahedi, E. Allahi, **K. Kavousi**, "Amplification of alpha globin gene amplicons of two caspian sea sturgeons and derivation of gene and protein sequence", 1st international & 13th iranian genetics congress, 2014.
- **K. Kavousi**, M. Sadeghi, B. Moshiri, B. Araabi, A. A. Moosavi-Movahedi, "The Concept of Hyperfold and Its Application to Evidence Theoretical Protein Fold Prediction", 1<sup>st</sup> International Conference on Biophysical Chemistry, Jun, 2012, Ardabil, Iran.
- **K. Kavousi**, B. Moshiri, M. Sadeghi, B. Araabi, A. A. Moosavi-Movahedi, "A Protein Fold Combined Classifier Based on Information Content of Sequence Extracted Features", The 9<sup>th</sup> ISOBC Conference, TMU, Tehran, Iran, February 2010.
- M. Pakdaman, B. Moshiri, **K. Kavousi**, "Protein Fold Recognition Using Bagging Ensemble of SVM Classifiers", 8<sup>th</sup> International Conference on Applications and Principles of Information Science, Okinawa, Japan, January 2009.
- **K. Kavousi**, A. Tohidi, M. Rahgozar, B. Moshiri, "A Novel Architecture for Broad Hetrogeneous Database Integration", 14<sup>th</sup> International Congress of Cybernetics and Systems of WOSC, September 2008.
- **K. Kavousi**, A. Tohidi, B. Moshiri, "Parameter Optimization for Evidence Theoretic KNN Protein Fold Classifiers", 2<sup>nd</sup> International Conference on Knowledge Management for Composite Materials (KMCM 2008), Vancouver, BC, Canada, July 2008.
- A. Younessi, M. Jamaluddin, **K. Kavousi**, "Decision Supporting System for Investment in MEMS Industries Using Fuzzy Inference and Data Fusion Techniques", International Symposium on Information Technology, ITSIm2008, Kuala Lumpur, Malaysia, 2008.
- **K. Kavousi**, B. Moshiri, "Architecture Design of an Intelligent Information Fusion Agent for Information Retrieval From Dynamic Environments", The 10<sup>th</sup> International Conference on Information Fusion, Quebec city, Canada, July 2007.
- **K. Kavousi**, B. Moshiri, "Behavioral Model Extraction of Search Engines", The First International Conference on Information and Knowledge Technology, Amirkabir University of Technology, Tehran, Iran, 2003.

### Activity in Scientific Societies

- Member of the Korean Society of Biochemistry and Molecular Biology (KSBMB)
- Member of the board of directors in Iranian Bioinformatics Society (IBIS)
- Member of Iran Society of Biophysical Chemistry (ISOBC).

### Skills and Expertise

<b>Hardware Design</b>	Computer interfacing, ISA & PCI board design, serial and parallel communications, data acquisition, microprocessor and microcontroller boards
<b>Operating Systems</b>	Linux(Cent OS, Ubuntu, ROCKS), MS DOS, Windows 3.1/9x/2000/XP/NT/Vista/7, VAX/VMS
<b>Cluster Computing</b>	ROCK Clustering tools
<b>Programming Languages &amp; Tools</b>	MATLAB, Java, C++ .Net, C# .Net, R, Python, Microsoft SQL Server, Borland Delphi (Object Pascal), Borland C++ Builder
<b>Chemometrics Analysis</b>	MCR-ALS, SIMPLISMA, EFA
<b>Web Programming</b>	ASP .NET, HTML, Java Script, VB Script, Microsoft Front Page
<b>Miscellaneous</b>	Inter Process Communication mechanisms, Socket Programming, Messaging, TCP/IP, Multithreaded programming, Microsoft Office (Word, Excel, Power Point)

### Supervised Ph.D. students

- 1) **Fatemeh Mansouri, (2013)** (Joint supervision with Dr. M. Rahgozar)  
Investigation of cancer signaling pathways using information extracted from biological networks.
- 2) **Samaneh Maleknia (2016)**  
Complex biological network analysis of systemic lupus erythematosus by combining Bayesian network approach.

**Supervised MSc students**

- 1) **Akram Ahmadi (2014)** (Joint supervision with Dr. A. Moeini)  
A New Method for Drug-Target Prediction with Drug Repositioning Approach
- 2) **Ehsan Heydari (2015)** (Joint supervision with Dr. M. Rahgozar)  
Identification of disease subnetwork markers in protein-protein interaction networks
- 3) **Seyed Majid Moosavi Kheyri (2015)** (Joint supervision with Dr. M. Rahgozar)  
Employing protein properties for detecting sparse complex in PPIs network
- 4) **Ali Sayyahi (2016)** (Joint supervision with Dr. S. A. Ghorshi)  
Improving Robustness of Complex Networks through Centrality Metrics Analysis
- 5) **Shahab Ebrahimi (2016)** (Joint supervision with Dr. Mohammad Izadi)  
An Algorithm for Distributed Connectivity Decomposition and its Applications in Information Dissemination
- 6) **Nooshin Sadat Taheri (2016)** (Joint supervision with Dr. S. A. Ghorshi)  
Text mining in biological data for protein-protein interaction
- 7) **Mahsa Sarvghad Khorasani (2016)** (Joint supervision with Dr. S. A. Ghorshi)  
The effect of Genetic Variations on Complex Social Networks Attributes