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Zahra Narimani

Assistant professor

Department of Computer Science and Information Technology, Institute of Advanced Studies and Basic Sciences, Zanjan, Iran (October 2017-present)

Education

PhD.: Bioinformatics (computer science subgroup)

University of Tehran, Tehran, Iran, 2010-2016

Current GPA via 18 passed credit hours: 18.8/20

Thesis: Machine Learning methods for inferring Gene Regulatory Networks

Visiting researcher (Algorithmic Bioinformatics group)

University of Bonn (Bonn-Aachen International Center for Information Technology), Bonn, Germany 2014-2015 (DAAD scholarship)

M.Sc.: Computer Engineering - Software

Sharif University of Technology, Tehran, Iran, 2007-2009

GPA: 18.08/20

Thesis: Genetic Algorithm for Protein Multiple Sequence Alignment

B.Sc.: Computer Engineering – Software

Isfahan University of Technology (IUT), Isfahan, Iran, 2003-2007

GPA: 17.67/20 via 144 passed credit hours

Research Interests

Machine Learning, Data Mining, Statistical Bioinformatics, Personalized Medicine, Cancer Research, Probabilistic Graphical Models

Books chapters

- Kaveh Baghaei, Nazanin Hosseinkhan, **Zahra Narimani**, Samaneh tokhan Beigy, Shima Abed, Mohammad Rostami. “**Next Generation Sequencing methods and data analysis**”. (Farsi), University of Shahid Beheshti Press, Tehran, Iran: (Summer 2017)
- Ali Masoudi-Nejad, **Zahra Narimani**, Nazanin Hosseinkhan. **Next Generation Sequencing and Sequence Assembly: methodologies and algorithms**. Springer Brief 2013

Journal Papers

- Sara Mohammadi, **Zahra Narimani**, Mitra Ashouri, Rohoullah Firouzi, Mohammad Hossein Karimi-Jafari, "Ensemble learning from ensemble docking: revisiting the optimum ensemble size problem", Scientific Reports, 2022 Jan 10;12(1):410. doi: 10.1038/s41598-021-04448-5.
- AH Adineha, **Z Narimani***, SC Satapathy; Importance of data preprocessing in time series prediction using SARIMA: a case study; International Journal of Knowledge-Based and Intelligent Engineering Systems. 24(4): 331-342 (2020)
- M Iman, **Z Narimani**, I Hamraz, E Ansari, Network based identification of different mechanisms underlying pathogenesis of human papilloma virus-active and human papilloma virus-negative oropharyngeal squamous cell carcinoma, Journal of the Chinese chemical society, (2018)
- **Z Narimani**, H Beigy, A Ahmad, A Masoudi-Nejad, H Fröhlich; "Expectation propagation for large scale Bayesian inference of non-linear molecular networks from perturbation data", PLoS one 12 (2), e0171240 (2017)
- Mahdiah Sadat Ghasemi, Zahra Narimani, Faeze Tamimi, Maseud Rahgozar, Ali Masoudi-Nejad NetCentra: Network Centrality Tool (under review)
- Peyman Zarrineh, Aminaél Sánchez-Rodríguez, Nazanin Hosseinkhan, **Zahra Narimani**, Kathleen Marchal, Ali Masoudi-Nejad. PLoS ONE 9(8): e102871. (2014)
- **Z Narimani**, Bidkhor, G., Ashtiani, S.H., Moeini, A., Nowzari-Dalini, A., and Masoudi-Nejad, A. Reconstruction of an Integrated Genome-Scale Co-Expression Network Reveals Key Modules Involved in Lung Adenocarcinoma. PLoS one 8, e67552. (2013)
 - **The first two authors have equivalently contributed to this work.**
- **Zahra Narimani**, Hamid Beigy, Hassan Abolhassani; “A New Genetic Algorithm for Multiple sequence Alignment”. International Journal Of Computational Intelligence & Applications 11.4 (2012)

Conference Papers

- Zohreh Karimi, **Zahra Narimani**, “Improvement of methods for filling missing values in GWAS data”, 3rd national and 1st international conference on Biomathematics, Jan 2022
- Sara Mohammadi, **Zahra Narimani***, Mitra Ashouri, Mohammad Hossein Karimi-Jafari, “Comparison of Random Forest and Boosted Regression Tree in improving predicted affinity”, 1st international and 10th national IRANIAN CONFERENCE on BIOINFORMATICS (ICB), February 2022

- Nazanin Hosseinkhan^{1*}, **Zahra Narimani**², Laily Najafi¹, Mohammad Ebrahim Khamseh, “Investigating the obesity paradox in patients with Hepatocellular carcinomas using bioinformatics approaches”, 1st international and 10th national **IRANIAN CONFERENCE on BIOINFORMATICS (ICB)**, February 2022
- Fariba Esmaeili, **Zahra Narimani**^{*}, Mahdi Vasighi, “discovering SNP-disease relationships in genome-wide data”, 4th international conference on soft computing, December 2021
- E Dorani, **Z Narimani**; “Probabilistic Disease Progression Modeling” 1st 2nd National Conference on Biomathematics, (2020)
- F Mousavi, **Z Narimani**; “Bayesian Inference of Gene Regulatory Networks”, In Farsi - 2nd National Conference on Biomathematics, (2020)
- A Jalilian, **Z Narimani**, E Ansari; “Static Signature-based Malware Detection using Opcode and Binary Information”; International Conference on Contemporary Issues on Data Science (2019)
- G. Bidkhorji, **Z. Narimani**, A. Masoudi-Nejad; “Reconstruction of CNV-related co-expression network in non small cell lung cancer (NSCLC)”; (2012) Poster in 4th Conference on Systems Biology of Mammalian Cells (SBMC)
- **Zahra Narimani**, Hassan Abolhassani, Hamid Beigy; "A new Genetic algorithms for Multiple Sequence Aglignment"; (In Persian), 15th international CSI computer conference ; Tehran, Iran, (2010)
- **Zahra Narimani**, Najmeh Ahmadian, Mohammad Saraee; “A Survey on Clustering Methods”, First International Conference on Data Mining (IDMC), Tehran, Iran, 2007

Poster Presentations

- Elahe Dorani¹, **Zahra Narimani**, Holger Fröhlich, “Probabilistic Modeling of Alzheimer’s Disease”. 3rd International & 5th National IASBS Symposium in Biological Sciences, (2020)
- Seyedeh Fatemeh Mousavi, **Zahra Narimani**, “Efficient MCMC based inference of Gene Regulatory Networks”. 3rd International & 5th National IASBS Symposium in Biological Sciences, (2020)

Executive Experiences

- **Executive chair, International conference on Contemporary Issues in Data Science (CiDaS2019)**, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran

Other Seminars and Projects

- **A workshop on analyzing Microarray Transcriptomic data**, 3rd International & 5th National IASBS Symposium in Biological Sciences, January 2020
- **An introduction to Artificial Intelligence and it's connection with Mathematics**; school of Mathematics, department of Mathematics, Institute for Advanced Studies in Basic Sciences (IASBS), Winter 2020
- **An introduction to Artificial Intelligence**, Blueprint conference, Zanjan University of Medical Science, May 2018
- **An Introduction to Data Mining seminar**, National Computer Exhibition, Isfahan Exhibition Center, Isfahan, Iran, 2007
- **Summer Seminars hold in Isfahan University of Technology**: Introduction to java programming and J2ME, 2007

Employment History

- **Assistant professor**, Department of Computer Science and Information Technology, Institute of Advanced Studies and Basic Sciences, Zanjan, Iran (October 2017-present)
- **Manager of Software programming team**, Imen Rayane Shargh Co., Tehran, Iran; 2012-2014
- **Java developer in Data Mining team**, Afta Co., Tehran, Iran; 2010-2011
- **R&D in Business Intelligence team, Sharif University of Technology, implementing Pilot Data Warehouse for Keshavarzi Bank**, 2010-2012
- **Teaching Computer Programming, SITCO Company (NIIT branch in Isfahan)**, Isfahan, Iran, 2006-2007
- **R&D section, Rahnema Co.**, Isfahan, Iran, 2005-2006

Honors & Achievements

- **6-month scholarship from DAAD for visiting students (2015)**
- **Merit Scholarship, Department of Computer Science, University of British Columbia, 2009** (Selected from an exceptionally strong 2009 applicant field - \$10,000 CAD on top of the ordinary support level)
- **Ph.D. tuition fee award**, University of Alberta, 2009
- **Ranked Second among 60 B.Sc. Students of Computer Engineering**, Isfahan University of Technology, Isfahan, Iran, 2007
- **Reaching finals in RoboCup @Home league**, China, 2008

Research Experiences

- **Analysis of complex networks (expert detection):** Laboratory of Bioinformatics, Institute for Advanced Studies in Basic Sciences (IASBS), 2019-Present
- **Disease progression modeling:** Laboratory of Bioinformatics, Institute for Advanced Studies in Basic Sciences (IASBS), 2018-Present
- **Inference of Gene Regulatory Networks:** Laboratory of Bioinformatics, Institute for Advanced Studies in Basic Sciences (IASBS), 2018-Present
- **Inference of Gene Regulatory Networks:** Laboratory of Systems Biology and Bioinformatics (LBB), Institute of Biochemistry and Biophysics, 2012-2016
- **Research on Gene Regulatory Network inference using Bayesian learning algorithms:** Algorithmic Bioinformatics group, Bonn-Aachen international center for IT, University of Bonn, Germany, 2014
- **De novo genome assembly:** Laboratory of Systems Biology and Bioinformatics (LBB), Institute of Biochemistry and Biophysics, 2011-2012
- **Protein Multiple Sequence Alignment:** Dr. Abolhassani's lab, Sharif University of Technology, 2009-2009
- **Research on Social Network Analysis:** Afta Co, Tehran, Iran, 2010-2011
- **Research on Data Mining:** Data Mining lab, Isfahan University of Technology, 2004-2007
- **Research on Mobile Programming:** Rahnema Co., Isfahan, Iran, 2005-2006
- **Research on Web Services:** Rahnema Co., Isfahan, Iran, 2005-2006
- **Research on Service Oriented Architecture:** Isfahan University of Technology, 2007-2008
- **Member of "Sourena" @Home RoboCup team:** Amirkabir University of Technology (Tehran Polytechnic) Home Robots Lab, Tehran, Iran, 2007-present

Teaching Experiences

- **Computational Data Mining (MSc course),** Department of IT, Institute for Advanced Studies in Basic Sciences, 2018-present
- **Distributed Systems (MSc course),** Department of IT, Institute for Advanced Studies in Basic Sciences, 2018-2019
- **Advanced Data Mining (MSc course),** Department of IT, Institute for Advanced Studies in Basic Sciences, 2017-present
- **Database design (BSc course),** Department of IT, Institute for Advanced Studies in Basic Sciences, 2017-2018
- **Computer Architecture (BSc course),** Department of IT, Institute for Advanced Studies in Basic Sciences, 2017-present
- **Bioinformatics,** Department of IT, Institute for Advanced Studies in Basic Sciences, 2016

- **Bioinformatics course**, Tehran University, 2013 (Under supervision of Dr. Ali Masoudi-Nejad)
- **Programming course (Java language)**: A course for B.Sc. students, in Isfahan University of Technology, Isfahan, Iran, 2006
- **Java Mobile Programming Workshop**: A course for B.Sc. students, in Isfahan University of Technology, Isfahan, Iran, Spring2006
- **Programming course (Java & C++ language)**: A course for high school students, NODET high school, Isfahan, Iran, 2007 - 2008
- **Mathematics Workshop**: A training course for guidance school & high school students, NODET, Isfahan, Iran, 2005, 2006
- **Programming course (Pascal language)**: A training course for guidance school students, NODET guidance school, Isfahan, Iran, 2005

Computer Skills

Programming Languages and technical skills: R, Python, C, C++, C#, Java, Database Design and programming, MySQL, MS-SQL

OS: Linux (Ubuntu), Windows

Language Skills

English: reading/writing/listening skills

German: beginner