

Mohammadreza Sehhati



Date of birth:	9 July 1981
Place of birth:	Isfahan, Iran
E-mail:	mr.sehhati @ gmail.com , mr.sehhati @ amt.mui.ac.ir
Position:	Assistant Professor at Isfahan University of Medical Sciences
Phone	+98-31-3792-3854

Profile

Ph.D. degree in biomedical engineering with experience in Machine Learning, Bioinformatics, Information Systems, Medical Image Processing, and Programming.

Education

- **2010-2015:** Ph.D. in Biomedical Engineering, [Isfahan University of Medical Sciences](#), Isfahan, Iran.
 - *GPA* = 18.6
 - *Thesis Title:* Seeking an appropriate feature extraction method for breast cancer recurrence prediction based on microarray gene expression data
- **2003-2006:** M.Sc. in Biomedical Engineering from [University of Tehran](#), Tehran, Iran.
 - *GPA* = 16.68
 - *Thesis Title:* Design and implementation of software infrastructures for an standard hospital information system based on HL7 protocol
- **1999-2003:** B.Sc. in Biomedical Engineering from [Shahed University](#), Tehran, Iran.
 - *GPA* = 16.99
 - *Thesis Title:* Design and manufacturing of a Holter-Monitoring device prototype

Teaching Experience

- **Isfahan University of Medical Sciences (2011-now):**
 - Advanced Topics in Neural Networks
 - Pattern Recognition
 - Modeling of Physiological Systems
 - Basics of Electrical and Electronic Circuits,
 - Clinical Laboratory for Biomedical Engineers
 - Medical Informatics
 - Digital Signal Processing,
 - Signals and Systems,
 - Biomedical Signal Processing (TA),
- **Sepahan Institute of Higher Education (2013-2016):**
 - Biomedical Instrumentation,
 - Principles of Rehabilitation and Devices
 - Programming with C++,
 - Application of Microcontrollers (AVR),
 - Biophysics,
 - Digital Image Processing,
- **Islamic Azad University of Khomeinishahr (2011-2013):**
 - Principles of Radiology and Radiotherapy,

- Principles of Rehabilitation and Devices,
- Digital Image Processing,
- Signals and Systems,
- Laboratory of Electrical Measurement
- **Shahed University (2007-2008):**
 - Laboratory of Electrical Measurement,
 - Laboratory of Pulsing Technique

Work Experience

The Green Science Institute (GSI)

Dept. of R&D, Image Processing Group, Tehran, Iran, 2005-2010.

- *Job title:* System Design, Algorithm Development, Programming.

Safe Soft Company

Dept. of Software Development, Tehran, Iran, 2008.

- *Job title:* Project Manager.

Relevant Responsibilities and Achievements

- **Director** of sessions for providing standards for more than 15 biomedical devices which were published by the Iranian National Standards Organization
- **Management** of communication and power engineering educational group, Sepahan institute of higher education, 2012-2013.
- **Director** of informatics team and **member of administration team** of 17th Iranian Conference on Biomedical Engineering, Isfahan University of Medical Sciences, 2010.
 - Design of full electronic process of registration, paper's upload and judgment, etc.
- **Management** of Bio-Instrument Laboratory, University of Tehran, 2006-2008.
 - Installation of *POWERLAB* instruments and design of laboratory program.

Research Projects

- **Bioinformatics** research projects (NGS analysis, gene networks, DNA microarrays analysis, ...)
- Several **diverse research project** (in the field of image processing and control) funded by Research Center of Intelligent Processing of Signals (Tehran, Iran).
- Design and manufacturing of a research **instrument for measurement of the reaction time** funded by University of Social Welfare and Rehabilitation Sciences (Tehran, Iran).
- Study on standard **protocols of communication in clinical information systems** as M.Sc. seminar.
- Investigation of present **rehabilitation technologies** in the world, funded by Social Welfare organization.

Key Skills

- **Special skills:**
 - Bioinformatics (Data mining, Microarray gene expression analysis, Network analysis, NGS analysis and variant calling),
 - Medical Image Processing (Algorithm design and software development),
 - Hospital Information System design/development/evaluation,

- Design and manufacturing of electronic circuits for biological signal measurement.
- **Computer skills:**
 - Programming (R, C++, MatLab, VB), Web (PHP, HTML, XML), Database (MySQL).
- **Languages:**
 - English (MHLE certificate), Persian (Native), Arabic (Beginner).

Publications

Journals:

- E. Saghapour, **M. Sehhati**, “Physicochemical Position-Dependent Properties in the Protein Secondary Structures”, Iranian Biomedical Journal 2019; 24(1).
- F. Safaei Firouzabadi, A. Vard, **M. Sehhati**, M Mohebian, “An Optimized Framework for Cancer Prediction Using Immunosignature”, Journal of medical signals and sensors 2018; 8(3):161-170.
- A. Shanei, A. Sazgarnia, E. Dolat, L. Hojaji-Najafabadi, **M. Sehhati**, M Baradaran-Ghahfarokhi, “Microwave hyperthermia in the presence of gold nanoparticles: Preliminary results”, Journal of Radiobiology 2018; 5(1).
- M.R. Pourreza, H. Mohammadi, L. Sadeghian, S. Asgharzadeh, **M. Sehhati**, M.A. Tabatabaiefar, “Applying Two Different Bioinformatic Approaches to Discover Novel Genes Associated with Hereditary Hearing Loss via Whole-Exome Sequencing: ENDEAVOUR and HomozygosityMapper”, Advanced Biomedical Research 2018; 7: 141.
- A. Shanei, A. Sazgarnia, E. Dolat, L. Hojaji-Najafabadi, **M. Sehhati**, M. Baradaran-Ghahfarokhi, “Dual Function of Gold Nanoparticles in Synergism with Mitoxantrone and Microwave Hyperthermia Against Melanoma Cells”, Asian Pac J Cancer Prev. 2017; 18(11): 2911-2917.
- E. Saghapour, S. Kermani, **M. Sehhati**, “A novel feature ranking method for prediction of cancer stages using proteomics data”, PLoS ONE 2017; 12(9): e0184203.
- E. Saghapour, **M. Sehhati**, “Prediction of metastasis in advanced colorectal carcinomas using CGH data”, Journal of Theoretical Biology 2017, 429:116-123.
- M. Rafati, E. Havaee, H. Moladoust, **M. Sehhati**, “Appraisal of different ultrasonography indices in patients with carotid artery atherosclerosis”, EXCLI Journal 2017; 16:727-741.
- M. Momenzadeh, **M. Sehhati**, A. Mehri Dehnavi, A. Talebi, H. Rabbani, “Automatic diagnosis of vulvovaginal candidiasis from Pap smear images”, Journal of Microscopy 2017; 267: 299–308.
- **M. Sehhati**, M. Kayed, “Evaluation of Different Classification Models to Extract Gene Signatures for Breast Cancer Recurrence Using Microarray Data”, Journal of Isfahan Medical School 2017; 35(419):98-103.
- A. Mehridehnavi, H. Zand, **M. Sehhati**, “Dimensionality reduction on topological features of the gene network constructed from microarray data for the prediction of breast cancer recurrence”, Journal of Isfahan Medical School 2016; 33(359).
- **M. Sehhati**, A. Mehridehnavi, H. Rabbani, M. Pourhossein, “Stable gene signature selection for prediction of breast cancer recurrence using joint mutual information”,

IEEE/ACM Transaction on Computational Biology and Bioinformatics 2015; 12(6): 1440-1448.

- A. Mehridehnavi, **M.R. Sehhati**, H. Rabbani, "Hybrid method for prediction of metastasis in breast cancer patients using gene expression signals", *Journal of Medical Signals and Sensors* 2013; 3(2):79-87.
- **M.R. Sehhati**, A. Mehridehnavi, H. Rabbani, S.H. Javanmard, "Using protein interaction database and support vector machine to improve gene signatures for prediction of breast cancer recurrence", *Journal of Medical Signals and Sensors* 2013; 3(2):87-93.

Conferences:

- **M.R. Sehati**, R.A. Zoroofi, H. Soltanian-zadeh, "A new method in design of an object-oriented and standard software substructure for Hospital Information Systems", *2nd International conference on Information and knowledge technology (IKT)*, Tehran, Amirkabir University, Tehran, Iran, 24-26 June 2005.
- V. Taimouri, **M.R. Sehati**, C. Locus, "Segmentation of MRI brain images using genetic algorithm for clustering of image data", *7th Conference on Intelligent Systems*, Khaje Nasireddin Toosi University, Tehran, Iran, 9-10 December 2005.
- **M.R. Sehati**, R.A. Zoroofi, H. Soltanian-zadeh, "Design and implementation of a standard radiology information management system under an extendable framework for develop healthcare information systems", *11th International Conference on Computer Science in Iran*, Institute for studies in theoretical physics and mathematics (IPM), Tehran, 24-26 January 2006.
- **M.R. Sehati**, V. Taimouri, C. Locus, "Human face detection based on matching with an optimized pattern using genetic algorithm", *14th International conference on Electrical Engineering in Iran*, Amirkabir University, Tehran, Iran, 2006.
- **M.R. Sehati**, H. Pourghassem, "Improvement of the Performance of an Automatic Object Tracking System in the Various Optical Conditions", *12th International Conference on Computer Science in Iran*, Shahid Beheshti University, Tehran, Iran, 20-22 February 2007.
- S.E. Mahmoodi, V. Taimouri, A.H. Simjour, S. F. Roohi, N. Asadi, M.R. Nazemzadeh, **M.R. Sehhati**, A. Akhoundi Asl, G. Hossein Zadeh, H. Soltanian-Zadeh, "Web based visualization and processing software for 2D and 3D datasets", *The 13th Iranian Conference on Biomedical Engineering*, Sharif University of Technology, Tehran, Iran, 21-22 Feb, 2007.

References

References, letters of recommendation and other documents available upon request