Curriculum Vitae (C.V.)
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Farnaz Sedighin

Birth date: 20 September 1985
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Current Status

Research Assistant Professor, Medical Image and Signal Processing Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

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Education

7/2019–now **Postdoc on Tensor Analysis**, *Skolkovo Institute of Science and Technology (Skoltech)*, Moscow, Russia.

9/2012–2/2018 **Ph.D. on Signal Processing**, *Sharif University of Technology*, Tehran, IRAN, GPA: **18.10/20**.

9/2007–2/2010 **M.Sc. on communication**, *Isfahan University of Technology*, Isfahan, IRAN, GPA: **17.46/20**.

9/2003–9/2007 **B.Sc. on Electrical Engineering (communication)**, *Isfahan University of Technology*, Isfahan, IRAN, GPA: **17.30/20**.

9/1999–9/2003 **Diploma in the field of mathematics**, *Farzanegan Amin highschool (A National Organization for Development of Exceptional Talents (NODET))*, Isfahan, IRAN, GPA: **19.60/20**.

My B.Sc. Project

Title   *Implementation of CIC filters by FPGA*

Supervisor   DR. Mohammad Javad Omidi, *Isfahan University of Technology*

My M.Sc. Thesis

Title   *ISAR rotational motion compensation using entropy metric*

Supervisor   Prof. Mahmoud Modarres Hashemi, *Isfahan University of Technology*

My Ph.D. Thesis

Title   *Multimodal blind source separation*

Supervisor   Prof. Massoud Babaie-Zadeh, *Sharif University of Technology*

My Postdoc Research Area

Title   *Tensor analysis and completion using tensor netwroks*

Supervisor   Prof. Andrzej Cichocki, *Skolkovo Institute of Science and Technology (Skoltech)*

Work Experiences

Prior to my Ph.D, I was working for a company in Iran (Fika). It is a small company mainly focuses on the maintenance of the mobile systems.

Academic experiences during my M.S and Ph.D. studies

2010–2017   **Student academic works**, Teacher Assistant (TA) of courses: "Signals&Systems" (17 hours, 2015), "Image Processing" (17 hours, 2010), "Numerical optimization" (17 hours, 2013 and 17 hours 2015), "Circuite II" (17 hours 2016), "Electrical basics I" (17 hours 2016).

Teaching

I have thought the following courses in Islamic Azad University of Khomeinishahr.
- "Signals&Systems" (9×45 hours), *undergraduate*.
- "Circuits I" (6×45 hours), *undergraduate*.

I have thought the following courses in Islamic Azad University of Najafabad.
- "C programming" (1×45 hours), *undergraduate*.

Reviewer

I was a reviewer of the following journals: Signal Processing (Elsevier), IEEE Transactions on Signal Processing, Scientia Iranica, IEEE wireless communication letters and IET Radar Sonar Navigation. I have also been a reviewer of conferences including IEEE Global conference on Signal and Information processing (GlobalSIP), Iranian Conference on Electrical Engineering (ICEE).

Honors and Awards

2003 Rank 373 (in the region 1) among 134,467 participants and rank 578 (in the whole country) among 399,321 participants in the national university entrance exam in Iran (konkoor) in the field of Mathematics.

2012 Rank 16 among 939 participants in the national Ph.D entrance exam.

2015 National Elites foundation academic award.

2016 National Elites foundation academic award.

Research Interests

- **Blind Source Separation (BSS) and Independent Component Analysis (ICA)**.

- **Multimodal signal processing**: with application to source separation, source enhancement,... .
- **Biological signal processing**.
- **Tensor decomposition and completion**.
- **Tensor networks**.

Languages

Persian Native language

English Excellent, reading, writing, speaking (TOEFL IBT 97/120)

Computer Skills

Operating systems Windows

Tools MS-office, TEX/LATEX, . . .

Programming MATLAB, C, Verilog

Publications

Journals

[1] F. Sedighin, M. Babaie-Zadeh, B. Rivet and C. Jutten, "Multimodal Soft Non-negative Matrix Co-Factorization for Convolutive Source Separation" *IEEE Transactions on Signal Processing*, vol. 65, no. 12, pp. 3179-3190, 2017. https://ieeexplore.ieee.org/abstract/document/7874217/

[2] F. Sedighin, A. Cichocki, T.Yokota and Q.Shi, "Matrix and Tensor Completion in Multiway Delay Embedded Transform Using Tensor Train, with Application to Signal Reconstruction" *IEEE Signal Processing Letters*, pp. 810–814, Apr. 2020. https://ieeexplore.ieee.org/abstract/document/9078764

[3] F. Sedighin, A. Cichocki, A-H. Phan, "Adaptive Rank Selection for Tensor Ring Decomposition", *Accepted in IEEE Journal of Selected Topics in Signal Processing*, 2021.

Conferences

[1] F. Sedighin, M. Modarres Hashemi "ISAR rotational motion compensation using entropy metric." in *Iranian Conference on Electrical Engineering (ICEE 2010)*, Isfahan (IRAN), 2010.

https://ieeexplore.ieee.org/abstract/document/5507058/

[2] F. Sedighin, M. Babaie-Zadeh, B. Rivet and C. Jutten, "Two multimodal approaches for single microphone source separation" in *24th Europian Signal Processing Conference (EUSIPCO),* , Budapest (Hungary), 2016, pp. 110-114. https://ieeexplore.ieee.org/abstract/document/7760220/

[3] F. Sedighin, M. Babaie-Zadeh, B. Rivet and C. Jutten, "A new algorithm for multimodal soft coupling" in *International conference on Latent Variable Analysis and Signal Separation*, Grenoble (France), 2017, pp. 162-171. https://link.springer.com/chapter/10.1007/978-3-319-53547-0_16

References

1. Professor Andrzej Cichocki (my Postdoc supervisor, IEEE fellow)

- Address: Computational and Data-Intensive Science and Engineering Department, Skolkovo Institute of Sciecnce and Technology (Skoltech), Moscow, Russia.
- Email: **a.cichocki@skoltech.ru**

2. Professor Christian Jutten (my Ph.D. thesis' advisor, IEEE fellow, member of Institut Universitaire de France)

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- Email: **christian.jutten@gipsa-lab.grenoble-inp.fr**
- Phone: +33 (0)4 76 57 43 51
- Fax: +33 (0)4 76 57 47 90

3. Professor Massoud Babaie-Zadeh (my Ph.D. thesis' supervisor, IEEE Senior member)

- Address: Electrical Engineering Department, Sharif University of Technology, Tehran, Iran.
- Email: **mbzadeh@yahoo.com**
- Phone: +98 (21)66 16 59 25

4. Professor Mahmoud Modarres Hashemi (my M.sc thesis' supervisor)

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