Mostafa SADEGHI

Researcher (Inria Starting Faculty Position),
MULTISPEECH team,
Inria Nancy - Grand Est

**CONTACT
INFORMATION**

Office no. C136, Inria Nancy - Grand Est,
615 Rue du Jardin-Botanique,
54600 Villers-lès-Nancy, France

Email: mostafa.sadeghi@inria.fr

Homepage: https://sites.google.com/site/msaadeghii23/

EDUCATION

Sharif University of Technology, Tehran, Iran

Ph.D., Electrical Engineering, Sept 2013 – April 2018
- Thesis topic: *Sparse Recovery and Dictionary Learning based on Proximal Methods in Optimization*
- Advisor: Prof. Massoud Babaie-Zadeh
- GPA: 18.37/20

M.Sc., Electrical Engineering, Sept 2010 – Sept 2012
- Thesis topic: *Sparse Representation and its Application in Image Denoising*
- Advisor: Prof. Massoud Babaie-Zadeh
- GPA: 17.43/20

Ferdowsi University of Mashhad, Mashhad, Iran

B.Sc., Electrical Engineering, Sept 2006 – Sept 2010
- GPA: 18.41/20

**RESEARCH
INTERESTS**

Statistical signal and image processing, latent variable generative models: variational autoencoders (VAEs), unsupervised audio-visual speech enhancement, Bayesian inference and probabilistic machine learning, local/global optimization

**RESEARCH
EXPERIENCES**

- Postdoctoral researcher (August 2018–October 2020), PERCEPTION team, Inria Grenoble Rhône-Alpes, France.

- Research engineer (September 2017–December 2017), Automatic Control Department, Royal Institute of Technology (KTH), Stockholm, Sweden.

- Visiting Ph.D. scholar (October 2016–July 2017), Information Science and Engineering Department, Royal Institute of Technology (KTH), Stockholm, Sweden.

**REFEREED
JOURNAL
PUBLICATIONS**

<div align="center">Google Scholar profile</div>

1. **M. Sadeghi**, S. Leglaive, X. Alameda-Pineda, L. Girin, and R. Horaud, "Audio-visual speech enhancement using conditional variational auto-encoders," *IEEE Transactions on Audio, Speech, and Language Processing*, May 2020 (accepted for publication).

2. **M. Sadeghi** and M. Babaie-Zadeh, "Dictionary learning with low mutual coherence constraint," *Neurocomputing*, May 2020 (accepted for publication).

3. F. Ghayem, **M. Sadeghi**, M. Babaie-Zadeh, S. Chatterjee, M. Skoglund, and C. Jutten, "Sparse signal recovery using iterative proximal projection," *IEEE Transactions on Signal Processing*, vol. 66, no. 4, pp. 879–894, February 2018.

4. **M. Sadeghi**, and M. Babaie-Zadeh, "Incoherent unit-norm frame design via an alternating minimization penalty method," *IEEE Signal Processing Letters*, vol. 24, no. 1, pp. 32-36, January 2017.

5. **M. Sadeghi**, and M. Babaie-Zadeh, "Iterative sparsification-projection: Fast and robust sparse signal approximation," *IEEE Transactions on Signal Processing*, vol. 64, no. 21, pp. 5536-5548, November 2016.

6. M. Joneidi, P. Ahmadi, **M. Sadeghi**, N. Rahnavard, "Union of low-rank subspaces detector," *IET Signal Processing*, vol. 10, no. 1, pp. 55–62, February 2016.

7. **M. Sadeghi**, M. Babaie-Zadeh, and C. Jutten, "Learning over-complete dictionaries based on atom-by-atom updating," *IEEE Transactions on Signal Processing*, vol. 62, no. 4, pp. 883-891, February 2014.

8. **M. Sadeghi**, M. Babaie-Zadeh, and C. Jutten, "Dictionary learning for sparse representation: A novel approach," *IEEE Signal Processing Letters*, vol. 20, no. 12, pp. 1195-1198, December 2013 (**Nominated for IEEE SPL best paper award, 2017**).

SUBMITTED
JOURNAL PAPERS

1. **M. Sadeghi** and X. Alameda-Pineda, "Mixture of inference networks for VAE-based audio-visual speech enhancement," Submitted to *IEEE Transactions on Signal Processing*, May 2020.

2. **M. Sadeghi**, S. Guy, A. Raison, X. Alameda-Pineda, and R. Horaud, "Unsupervised performance analysis of 3D face alignment," Submitted to *International Journal of Computer Vision*, April 2020.

3. S. Chatterjee, A. M. Javid, **M. Sadeghi**, S. Kikuta, P. P. Mitra, M. Skoglund, "SSFN: Self Size-estimating Feed-forward Network and Low Complexity Design," Submitted to *IEEE Transactions on Neural Networks and Learning Systems*, March 2020.

CONFERENCE
PUBLICATIONS

1. **M. Sadeghi** and X. Alameda-Pineda, "Robust Unsupervised Audio-visual Speech Enhancement Using a Mixture of Variational Autoencoders," in *IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP)*, Barcelona, Spain, May 2020.

2. J. Parsa, **M. Sadeghi**, M. Babaie-Zadeh, and C. Jutten, "Low Mutual and Average Coherence Dictionary Learning Using Convex Approximation," in *IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP)*, Barcelona, Spain, May 2020.

3. J. Parsa, **M. Sadeghi**, M. Babaie-Zadeh, and C. Jutten, "A New Algorithm for Dictionary Learning Based on Convex Approximation," in *Proceedings of the 27th European Signal Processing Conference (EUSIPCO)*, Coruña, Spain, 2-6 September 2019.

4. **M. Sadeghi**, F. Ghayem, M. Babaie-Zadeh, S. Chatterjee, M. Skoglund, and C. Jutten, "L0Soft: L0 Minimization via Soft Thresholding," in *Proceedings of the 27th European Signal Processing Conference (EUSIPCO)*, 2-6 September 2019.

5. J. Parsa, **M. Sadeghi**, M. Babaie-Zadeh, and C. Jutten, "Joint Low Mutual And Average Coherence Dictionary Learning," in *Proceedings of the 26th European Signal Processing Conference (EUSIPCO)*, Rome, Italy, 3-7 September 2018.

6. **M. Sadeghi**, C. R. Rojas, and B. Wahlberg, "A Branch and Bound approach to system identification based on fixed-rank Hankel matrix optimization," in *18th IFAC Symposium on System Identification (SYSID)*, 2018.

7. F. Ghayem, **M. Sadeghi**, M. Babaie-Zadeh, and C. Jutten, "Accelerated dictionary learning for sparse signal representation," in *13th International Conference on Latent Variable Analysis and Signal Separation, LVA/ICA*, Grenoble, France, 2017.

8. **M. Sadeghi**, M. Babaie-Zadeh, and C. Jutten, "Regularized low-coherence overcomplete dictionary learning for sparse signal decomposition," in *Proceedings of 24th European Signal Processing Conference (EUSIPCO 2016)*, Budapest, Hungary, 2016.

9. M. Niknejad, **M. Sadeghi**, M. Babaie-Zadeh, H. Rabbani and C. Jutten, "A Dictionary Learning Method for Sparse Representation Using a Homotopy Approach," in *12th International Conference on Latent Variable Analysis and Signal Separation, LVA/ICA*, Liberec, Czech Republic, 2015.

10. S. Amini, **M. Sadeghi**, M. Joneidi, M. Babaie-Zadeh, and C. Jutten, "Outlier-aware dictionary learning for sparse representation," in *IEEE International Workshop on Machine Learning for Signal Processing (MLSP 2014)*, Reims, France, 2014.

11. **M. Sadeghi**, M. Babaie-Zadeh, and C. Jutten, "Learning over-complete dictionaries based on parallel atom-updating," in *Proceedings of 23rd IEEE International Workshop on Machine Learning for Signal Processing (MLSP)*, London, 2013.

12. M. Joneidi, **M. Sadeghi**, M. Sahraee, M. Babaie-Zadeh, and C. Jutten, "A study on clustering-based image denoising: From global clustering to local grouping," in *Proceedings 22nd European Signal Processing Conference (EUSIPCO 2014)*, Lisbon, Portugal, 2014.

13. M. Joneidi, J. Golmohammadi, **M. Sadeghi**, M. Babaie-Zadeh, and C. Jutten, "K-LDA: An algorithm for Learning jointly reconstructive and discriminative dictionaries ," in *Proceedings 22nd European Signal Processing Conference (EUSIPCO 2014)*, Lisbon, Portugal, 2014.

14. **M. Sadeghi** , M. Joneidi, M. Babaie-Zadeh, and C. Jutten, "Sequential subspace finding: A new algorithm for learning low-dimensional linear subspaces," in *Proceedings of 21st European Signal Processing Conference (EUSIPCO 2013)*, Marrakesh, Morocco, 2013.

15. **M. Sadeghi**, M. Babaie-Zadeh, and C. Jutten, "A new algorithm for learning over-complete dictionaries," in *Proceedings of 21st European Signal Processing Conference (EUSIPCO 2013)*, Marrakesh, Morocco, 2013.

TEACHING EXPERIENCE	**Teaching Assistant** *Compressed sensing* Sharif University of Technology Advisor: Dr. Arash Amini	Spring 2015
	Teaching Assistant *Numerical optimization* Sharif University of Technology Advisor: Prof. Massoud Babaie-Zadeh	Fall 2015
	Teaching Assistant *Adaptive filters* Sharif University of Technology Advisor: Prof. Massoud Babaie-Zadeh	Fall 2014

HONORS &
AWARDS

- Received Iran National Science Foundation (INSF) Ph.D. financial support   2016
- Full travel grant (CHESS project), 13th LVA/ICA workshop, Grenoble, France 2017
- Received a visiting research scholarship, Information Science and Engineering
  Department, Royal Institute of Technology (KTH), Stockholm, Sweden   2016
- Received 1-year National Elite Foundation Ph.D. fellowship   2017
- Received 1-year National Elite Foundation Ph.D. fellowship   2016
- Received 1-year National Elite Foundation Ph.D. fellowship   2015
- Full travel grant (CHESS project), 24th European Signal Processing
  Conference (EUSIPCO), Budapest, Hungary   2016
- Rank 2 in the nation-wide university entrance exam for Ph.D.   2013
- Rank 12 in the nation-wide university entrance exam for M.Sc.   2010
- Rank 3 among all undergraduate electrical engineering students
  at Ferdowsi University of Mashhad, IRAN.   2010
- Rank 1 in the first, and 5 in the final stage of the 15$^{\text{th}}$ nation-wide
  electrical engineering Olympiad, IRAN.   2010

COMPUTER SKILLS

- *Programming Languages and Softwares:*   MATLAB, Python, PyTorch
- *Typesetting:*   LaTeX

SELECTED
COURSES

• Compressed Sensing	Dr. Arash Amini
• Data Compression	Prof. Farokh Marvasti
• Statistical Pattern Recognition	Dr. Emad Fatemizadeh
• Estimation Theory	Prof. M. Reza Aref
• Digital Image Processing	Dr. Emad Fatemizadeh
• Time-Frequency/Time-Scale Analysis	Prof. M. Bagher Shamsollahi
• Convex Optimization	Dr. Jamal Golsetani
• Blind Source Separation	Prof. Massoud Babaie-Zadeh
• Numerical Optimization	Prof. Massoud Babaie-Zadeh
• Adaptive Filters	Prof. Massoud Babaie-Zadeh
• Information Theory	Prof. M. Reza Aref

PROFESSIONAL
SERVICES

Reviewer for the following journals:

- IEEE Transactions on Signal Processing
- IEEE Transactions on Image Processing
- IEEE Transactions on Computational Imaging
- IEEE Transactions on Industrial Electronics
- IEEE Transactions on Medical Imaging
- IEEE Transactions on Pattern Analysis and Machine Intelligence

- IEEE Signal Processing Letters
- Signal Processing
- Neurocomputing

REFERENCES

Prof. Massoud Babaie-Zadeh
Professor,   Phone: +98 6616-5925
Electrical Engineering Department,   E-mail: mbzadeh@yahoo.com
Sharif University of Technology.

Prof. Christian Jutten
Professor,   Phone: + 33 (0) 4 7657 4351
Images and Signal Department (DIS),   Christian.Jutten@gipsa-lab.grenoble-inp.fr
Université Grenoble Alpes.

Dr. Saikat Chatterjee
Assistant Professor,   Phone: +46 8 790 84 78
School of Electrical Engineering,   E-mail: sach@kth.se
Information Science and Engineering (ISE) Department,
KTH Royal Institute of Technology.

Dr. Cristian R. Rojas
Associate Professor,   Phone: +46 8 790 74 27
Department of Automatic Control,   E-mail: cristian.rojas@ee.kth.se
School of Electrical Engineering,
KTH Royal Institute of Technology.

Dr. Radu Horaud
Research Director,   Phone: +33 (0)476615226
PERCEPTION team,   E-mail: radu.horaud@inria.fr
Inria Grenoble Rhône-Alpes.

Dr. Xavier Alameda-Pineda
Research Scientist,   Phone: +33 (0)476615208
PERCEPTION team,   E-mail: xavier.alameda-pineda@inria.fr
Inria Grenoble Rhône-Alpes.