

# Mohammad Shahdloo

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## Academic Experience

### Research

2020–present **Postdoctoral Researcher**, FMRIB Centre/University of Oxford.

2014–2020 **Graduate Researcher**, ICON Lab/Bilkent University.

Contributing to various research projects, with focus on attentional modulations of the cortical representation of audio-visual natural stimuli, and developing reconstruction techniques for accelerated MRI.

### Teaching

2020–present **Tutor**, FMRIB Graduate Course, University of Oxford.

- MR Physics

2014–2020 **Teaching Assistant**, EE Department, Bilkent University.

- Statistical Learning
- Biomedical Signals and Instrumentation
- Microcontrollers
- Computational Neuroscience
- Neural Networks
- Electromagnetics

## Education

Jan 2017 **Ph.D.**, Bilkent University, Ankara/Turkey, *Electrical and Electronics Engineering Department*.

Feb 2020 Electrical and Electronics Engineering

Advisor: Tolga Çukur

Dissertation title: *Optimization and Machine-Learning in MRI: Applications in Rapid MR Image Reconstruction and Encoding Models of Cortical Representations*

Sep 2014 **M.Sc.**, Bilkent University, Ankara/Turkey, *Electrical and Electronics Engineering Department*.

Dec 2016 Electrical and Electronics Engineering

Advisor: Tolga Çukur

Sep 2007 **B.Sc.**, Amirkabir University of Technology, Tehran/Iran, *Electrical Engineering Department*.

Jun 2011 Electrical Engineering/Control Engineering

Advisor: Behzad Samadi

## Experience in Industry

2014-2014 **Hardware developer**, Farineh Fanavar, Tehran, Iran.

2013-2014 **Senior software developer**, K.A.G., Tehran, Iran.

2011-2013 **RnD Engineer**, Kerman Tablo, Tehran, Iran.

## Publications

### Articles

- [4] S. U. H. Dar, M. Yurt, **M. Shahdloo**, E. Ildiz, B. Tinaz, and T. Çukur, “Prior-Guided Image Reconstruction for Accelerated Multi-Contrast MRI via Generative Adversarial Networks,” *IEEE Journal of Selected Topics on Signal Processing*, vol. 14, no. 6, pp. 1072–1087, Oct. 2020. DOI: 10.1109/JSTSP.2020.3001737.

- [3] **M. Shahdloo**, E. Çelik, and T. Çukur, “Biased competition in semantic representation during natural visual search,” *NeuroImage*, vol. 216, no. 1, p. 116383, Aug. 2020. DOI: 10.1016/j.neuroimage.2019.116383.
- [2] **M. Shahdloo**, E. Ilicak, M. Tofighi, E. U. Saritas, A. E. Cetin, and T. Çukur, “Projection onto Epigraph Sets for Rapid Self-Tuning Compressed Sensing MRI,” *IEEE Transactions on Medical Imaging*, vol. 38, no. 7, pp. 1677–1689, Jul. 2019. DOI: 10.1109/TMI.2018.2885599.
- [1] S. U. H. Dar, M. Yurt, **M. Shahdloo**, and T. Çukur, “Synergistic Reconstruction and Synthesis via Generative Adversarial Networks for Accelerated Multi-Contrast MRI,” *arxiv*, 2018. eprint: 1805.10704v1.

#### Peer Reviewed Conference Publications

- [7] S. U. H. Dar, M. Yurt, **M. Shahdloo**, and T. Çukur, “Joint recovery of variably accelerated multi-contrast mri acquisitions via generative adversarial networks,” in *27th annual meeting of the International Society for MR in Medicine (ISMRM)*, Montreal, Jun. 2019, p. 0666.
- [6] **M. Shahdloo**, M. Acar, and T. Çukur, “Attention during story listening modulates temporal receptive windows across human cortex,” in *Conference for Cognitive Computational Neuroscience (CCN)*, Berlin, Sep. 2019, PS-1A.52.
- [5] **M. Shahdloo** and T. Çukur, “Trade-off between fat-suppression and partial-voluming in weighted combination alternating repetition-time (ATR) balanced SSFP,” in *36th annual meeting of the European Society for MR in Medicine and Biology (ESMRMB)*, Rotterdam, Oct. 2019, p. L06.09.
- [4] **M. Shahdloo**, B. Ürgen, E. Çelik, and T. Çukur, “Attention to action categories shifts semantic tuning toward targets across the brain,” in *25th annual meeting of the Organization for Human Brain Mapping (OHBM)*, Rome, Jun. 2019, T661.
- [3] **M. Shahdloo**, E. Ilicak, M. Tofighi, E. U. Saritas, A. E. Cetin, and T. Çukur, “Rapid self-tuning compressed-sensing MRI using projection onto epigraph sets,” in *26th annual meeting of the International Society for MR in Medicine (ISMRM)*, Paris, Jun. 2018, p. 0251.
- [2] **M. Shahdloo** and T. Çukur, “Biased competition in semantic representations during category-based visual search,” in *23rd annual meeting of the Organization for Human Brain Mapping (OHBM)*, Vancouver, Jun. 2017.
- [1] **M. Shahdloo**, E. Ilicak, M. Tofighi, E. U. Saritas, A. E. Cetin, and T. Çukur, “Adaptive wavelet thresholding for profile-encoding reconstruction of balanced steady-state free precession acquisitions,” in *34th annual meeting of the European Society for MR in Medicine and Biology (ESMRMB)*, Barcelona, Oct. 2017.

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## Programming Skills

Programming Languages	Python (professional), Matlab (professional), C (professional), C++ (professional), R (intermediate), C# (intermediate), Fortran (intermediate)
Tools	Tensorflow (professional), Keras (professional), PyTorch (intermediate), NiPype (frequently used), Git (frequently used), SVN (often used)

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## Honors and Awards

2014–2021	Full scholarship granted by Bilkent University for graduate studies
2012	Ranked 28th among 100k participants in Iranian national higher education examination
2006	Bronze medal in the Iranian National Physics Olympiad

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## Community Service

Editorial board	Frontiers in Neuroscience OHBM Aperture
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Ad-hoc IEEE Transactions on Medical Imaging  
reviewing Conference on Cognitive Computational Neuroscience (CCN)

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## Scientific Organization Memberships

- International Society for MR in Medicine (ISMRM)
- Organization for Human Brain Mapping (OHBM)
- European Society for MR in Medicine and Biology (ESMRMB)

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## References

- Dr. Mark Chiew,  
FMRIB Centre, University of Oxford,  
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- Dr. Tolga Çukur,  
EEE Dept. and UMRAM, Bilkent University,  
cukur@ee.bilkent.edu.tr