Muzaffer Özbey

Department of Electrical and Electronics
Engineering at Bilkent University, Turkey

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Research Interests

- Medical Imaging
- Magnetic Resonance Imaging
- Image Synthesis/Reconstruction
- Deep Learning

Education

Jul 2018 – Sep 2021 **Bilkent University**, *Ankara, Turkey*
M.Sc., Department of Electrical and Electronics Engineering
Advisor: Prof. Tolga Çukur
Thesis: Deep Learning for Accelerated 3D MRI.

Sep 2013 – Jun 2018 **Bilkent University**, *Ankara, Turkey*
B.Sc., Department of Electrical and Electronics Engineering.

Publications

Articles

[4] **M. Ozbey***, M. Yurt*, S. U. H. Dar, B. Tınaz, and T. Cukur, "Progressively volumetrized deep generative models for data-efficient contextual learning of MR image recovery," under revision *Medical Image Analysis*, 2021. [Online]. Available: `https://arxiv.org/abs/2011.13913`.

[3] S. U. H. Dar, **M. Özbey**, A. B. Çatlı, and T. Çukur, "A transfer-learning approach for accelerated mri using deep neural networks," *Magnetic resonance in medicine*, vol. 84, no. 2, pp. 663–685, 2020.

[2] M. Yurt, S. U. H. Dar, **M. Ozbey**, B. Tınaz, K. K. Oğuz, and T. Çukur, "Semi-supervised learning of mutually accelerated MRI synthesis without fully-sampled ground truths," under revision *IEEE Transactions on Medical Imaging*, 2021. [Online]. Available: `https://arxiv.org/abs/2011.14347`.

[1] Y. Korkmaz, S. U. H. Dar, M. Yurt, **M. Ozbey**, and T. Çukur, "Unsupervised MRI reconstruction via zero-shot learned adversarial transformers," under revision *IEEE Transactions on Medical Imaging*, 2021. [Online]. Available: `https://arxiv.org/abs/2105.08059`.

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Peer-Reviewed Conference Proceedings

[9] M. Yurt, **M. Ozbey**, S. U. H. Dar, B. Tinaz, K. K. Oğuz, and T. Çukur, "Progressive volumetrization for data-efficient image recovery in accelerated multi-contrast MRI," in *29th annual meeting of International Society for Magnetic Resonance Imaging (ISMRM)*, Virtual Conference, May 2021.

[8] M. Yurt, S. U. H. Dar, B. Tinaz, **M. Ozbey**, Y. Korkmaz, and T. Çukur, "A semi-supervised learning framework for jointly accelerated multi-contrast mri synthesis without fully-sampled ground-truths," in *29th annual meeting of International Society for Magnetic Resonance Imaging (ISMRM)*, Virtual Conference, May 2021.

[7] Y. Korkmaz, S. U. H. Dar, M. Yurt, **M. Ozbey**, and T. Çukur, "A zero-shot learning approach for accelerated MRI reconstruction," in *29th annual meeting of International Society for Magnetic Resonance Imaging (ISMRM)*, Virtual Conference, May 2021.

[6] M. Yurt, B. Tınaz, **M. Ozbey**, S. U. H. Dar, and T. Çukur, "Semi-supervised learning of multi-contrast MR image synthesis without fully-sampled ground-truth acquisitions," in *Medical Imaging Meets NeurIPS*, Virtual Conference, Dec. 2020.

[5] S. U. H. Dar, M. Yurt, **M. Ozbey**, and T. Çukur, "Hybrid deep neural network architectures for multi-coil MR image reconstruction," in *28th annual meeting of International Society for Magnetic Resonance Imaging (ISMRM)*, Virtual Conference, Aug. 2020.

[4] **M. Ozbey**, M. Yurt, S. U. H. Dar, and T. Çukur, "Three-dimensional MR image synthesis with progressive generative adversarial networks," in *IEEE 17th International Symposium on Biomedical Imaging (ISBI)*, Virtual Conference, Apr. 2020.

[3] S. U. H. Dar, M. Yurt, **M. Ozbey**, and T. Çukur, "Hybrid deep neural networks for parallel MR image reconstruction," in *IEEE 17th International Symposium on Biomedical Imaging (ISBI)*, Virtual Conference, Apr. 2020.

[2] **M. Ozbey** and T. Cukur, "Multi-image reconstruction in multi-contrast mri," in *2021 29th Signal Processing and Communications Applications Conference (SIU)*, 2021, pp. 1–4. DOI: 10.1109/SIU53274.2021.9477799.

[1] **M. Ozbey** and T. Çukur, "T1-weighted contrast-enhanced synthesis for multi-contrast mri segmentation," in *2020 28th Signal Processing and Communications Applications Conference (SIU)*, IEEE, 2020, pp. 1–4.

Honors and Awards

2018–2021 **Bilkent University Graduate Scholarship**: full tuition waiver and stipend during M.Sc.

2018–2021 **Scientific-Technological Research Council of Turkey**: monthly stipend during M.Sc.

2013–2018 **Bilkent University Undergraduate Scholarship**: full tuition waiver and stipend during B.Sc.

2013–2018 **Scientific-Technological Research Council of Turkey**: merit-based monthly stipend during B.Sc.

2015–2015 **Bilkent Programming Club**: Executive Member

2013 **Turkish National University Entrance exam**: ranked 881^{st} among 1.9 million candidates

2012 20^{th} **Turkey National Physic Olympiad**: Gold Medal

2012 1^{st} **Bilkent Physic Olympiads**: Bronze Medal

2012 20^{th} **Turkey National Physic Olympiads:**: 1^{st} degree on first stage

Academic Duties

2018–2021 **Teaching Assistance at Electrical and Electronics Engineering at Bilkent University**.

- EEE 211: Analog Electronics
- EEE EEE 212: Microprocessors
- MATH 241: Engineering Mathematics I
- GE 402: Innovative Design and Entrepreneurship II

2014 **Lecturer**at Physics Olympiad Training Program Scientific-Technological Research Council of Turkey

Skills

Programming Python, Matlab, Java, VHDL, Assembly, C++

Frameworks PyTorch, TensorFlow

Tools LaTeX, Blender, Inkscape, Illustrator, FSL

Languages English (Fluent), Turkish (Native), Japanese (Beginner)

Experience in Industry

2017-2018 **Senior Project**, *Havelsan Defence*, Ankara, Turkey.

2017 **Intern**, *Meteksan Defence*, Ankara, Turkey.

2016 **Intern**, *Aselsan-Bilkent Micro Nano Technology Tic. A.Ş.*, Ankara, Turkey.