Onat Dalmaz

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Research Interests

- Machine Learning
- Medical Imaging
- Medical Image Analysis
- Signal Processing
- Computer Vision
- Generative Models

Education

Sep 2020 – June 2023 **Bilkent University, Ankara, Turkey**, *M.Sc., Electrical and Electronics Engineering*, **Advisor**: Prof. Tolga Çukur, **CGPA**: 4.00/4.00.

Sep 2016 – June 2020 **Bilkent University, Ankara, Turkey**, *B.Sc., Electrical and Electronics Engineering*, **Advisor**: Prof. Tolga Çukur, **CGPA**: 3.77/4.00.

Honors and Awards

2022 **2022 ISMRM Magna Cum Laude Merit Award**, *awarded to excellent oral presenters in 31st Joint Annual Meeting ISMRM-ESMRMB & ISMRT* , London, UK.

2022 **Journal Article Publication Incentive**, *Bilkent University, Department of Electrical and Electronics Engineering*, received prize stipend from the department.

2022 **Best research paper award**, *in Bilkent University Graduate Research Conference 2022.*

2020-present **Scientist Supporting Program Scholarship**, *Scientific and Technological Research Council of Turkey*, Merit-based monthly stipend during M.Sc. (project no: 1649B022003160).

2020-present **Research Project Support Program Scholarship**, *Scientific and Technological Research Council of Turkey*, Merit-based monthly stipend during M.Sc. (project no: 121E488, 121N029).

2020-present **Bilkent University Graduate Comprehensive Scholarship**, *full tuition waiver, stipend, and accomodation during M.Sc.*

2016-2020 **Bilkent University Undergraduate Comprehensive Scholarship**, *full tuition waiver, stipend, and accomodation during B.Sc.*

2016-2020 **Turkish Prime Ministry Fellowship**, *Merit-based national fellowship of monthly stipend during B.Sc., granted to only 100 students among 2.5 million candidates in Turkey.*

2018 **Huawei "Seeds For The Future" winner**, *taken 2 weeks of elite Information and Communacation Technologies training at (all costs covered) Shenzen Huawei HQ, China.*

2016 **Turkiye Is Bankası Golden Youth**, *merit-based award due to success in University Entrance exam 2016*, Istanbul, Turkey.

2016 **Ranked 18th**, *among 2.5 million candidates in Turkish National University Entrance exam 2016.*

Publications (Google Scholar)

Journal Articles

6. M. Yurt, **O. Dalmaz**, S. Dar, M. Ozbey, B. Tinaz, K. Oguz, and T. Çukur, "Semi-supervised learning of mutually accelerated MRI synthesis without fully-sampled ground truths," in *IEEE Transactions on Medical Imaging*, Aug 2022. [Online]. Available: https://ieeexplore.ieee.org/document/9857899

5. M. Özbey, S. Dar, A. Bedel, **O. Dalmaz**, S. Özturk, A. Güngör, T. Çukur, "Unsupervised Medical Image Translation with Adversarial Diffusion Models," under revision *IEEE Transactions on Medical Imaging*, Jul 2022. [Online]. Available: https://arxiv.org/abs/2207.08208

4. **O. Dalmaz**, U. Mirza, G. Elmas, M. Özbey, S. Dar, E. Ceyani, S. Avestimehr, and T. Çukur, "One Model to Unite Them All: Personalized Federated Learning of Multi-Contrast MRI Synthesis," under revision *IEEE Transactions on Medical Imaging*, Jul 2022. [Online]. Available: https://arxiv.org/abs/2207.06509

3. I. Aytekin, **O. Dalmaz**, K. Gonc, H. Ankishan, E.U. Saritas, U. Bagci, H. Celik, and T. Çukur, "COVID-19 Detection from Respiratory Sounds with Hierarchical Spectrogram Transformers," under revision *IEEE Journal of Biomedical and Health Informatics*, Jul 2022. [Online]. Available: https://arxiv.org/abs/2207.09529

2. A. Bedel, I. Sivgin, **O. Dalmaz**, S. Dar, and T. Çukur, "BolT: Fused Window Transformers for fMRI Time Series Analysis," under revision *Medical Image Analysis*, May 2022. [Online]. Available: https://arxiv.org/abs/2205.11578

1. **O. Dalmaz**, M. Yurt and T. Çukur, "ResViT: Residual Vision Transformers for Multimodal Medical Image Synthesis," in *IEEE Transactions on Medical Imaging*, vol. 41, no. 10, pp. 2598-2614, Apr 2022. [Online]. Available: https://ieeexplore.ieee.org/document/9758823

Peer-Reviewed Conference Proceedings

13. **O. Dalmaz**, U. Mirza, G. Elmas, M. Özbey, S. Dar, and T. Çukur "A Specificity-Preserving Generative Model for Federated MRI Translation," in *3rd MICCAI Workshop on "Distributed, Collaborative and Federated Learning" (MICCAI-DeCaF)*, Virtual Conference, Sep. 2022 (Presented online)

12. **O. Dalmaz**, I. Aytekin, S. U. H. Dar, A. Erdem, E. Erdem and T. Cukur, "Multi-Contrast MRI Synthesis with Channel-Exchanging-Network," *IEEE 30th Signal Processing and Communications Applications Conference (SIU)*, May 2022, Karabuk, Turkey (Presented on-site)

11. B. Saglam, F. B. Mutlu, K. Gonc, **O. Dalmaz** and S. S. Kozat, "An Intrinsic Motivation Based Artificial Goal Generation in On-Policy Continuous Control," *IEEE 30th Signal Processing and Communications Applications Conference (SIU)*, May 2022, Karabuk, Turkey

10. M. U. Mirza, **O. Dalmaz** and T. Çukur, "Skip Connections for Medical Image Synthesis with Generative Adversarial Networks," *IEEE 30th Signal Processing and Communications Applications Conference (SIU)*, May 2022, Karabuk, Turkey (Presented on-site)

9. B. Saglam, F. B. Mutlu, **O. Dalmaz** and S. S. Kozat, "Unified Intrinsically Motivated Exploration for Off-Policy Learning in Continuous Action Spaces," *IEEE 30th Signal Processing and Communications Applications Conference (SIU)*, May 2022, Karabuk, Turkey

8. B. Saglam, **O. Dalmaz**, K. Gonc and S. S. Kozat, "Improving the Performance of Batch-Constrained Reinforcement Learning in Continuous Action Domains via Generative Adversarial Networks," *IEEE 30th Signal Processing and Communications Applications Conference (SIU)*, May 2022, Karabuk, Turkey

7. **O. Dalmaz**, B. Sağlam, K. Gönç, S. U. Dar and T. Çukur, "Bottleneck Sharing Generative Adversarial Networks for Unified Multi-Contrast MR Image Synthesis," *IEEE 30th Signal Processing and Communications Applications Conference (SIU)*, May 2022, Karabuk, Turkey (Presented on-site)

6. S. Y. Selçuk, **O. Dalmaz**, S. U. H. Dar and T. Çukur, "Improving Image Synthesis Quality in Multi-Contrast MRI Using Transfer Learning via Autoencoders," *IEEE 30th Signal Processing and Communications Applications Conference (SIU)*, May 2022, Karabuk, Turkey (Presented on-site)

5. **O. Dalmaz**, M. Yurt, S. U. H. Dar, and T. Cukur, "Cycle-Consistent Adversarial Transformers for Unpaired MR Image Translation," in *30th annual meeting of International Society for Magnetic Resonance Imaging (ISMRM)*, London, May 2022. (Presented on-site)

4. I. Aytekin, **O. Dalmaz**, K. Gonc, H. Ankishan, E.U. Saritas, U. Bagci, H. Celik, and T. Çukur, "Detecting COVID-19 from respiratory sound recordings with transformers," in *SPIE Medical Imaging 2022: Computer-Aided Diagnosis*, San Diego, USA, Apr. 2022 (Presented on-site)

3. **O. Dalmaz**, M. Yurt, and T. Cukur, "Adversarial Residual Transformers For Multi-Modal Medical Image synthesis," in *IEEE 19th International Symposium on Biomedical Imaging (ISBI)*, Virtual Conference, Mar. 2022. (Presented online)

2. **O. Dalmaz**, B. Saglam, K. Gönç and T. Çukur, "edaGAN: Encoder-Decoder Attention Generative Adversarial Networks for Multi-contrast MR Image Synthesis,"*IEEE 9th International Conference on Electrical and Electronics Engineering (ICEEE)*, Virtual Conference, Mar. 2022, (Presented online)

1. **O. Dalmaz**, M. Yurt, and T. Cukur, "Medical Image Synthesis with Residual Vision Transformers," *NeurIPS Medical Imaging Meets*, Virtual Conference, Dec. 2021. (Presented online)

Academic Duties

Program Committee

- **2022 MICCAI - Medical Image Computing and Computer Assisted Intervention**
  - Machine Learning in Clinical Neuroimaging
  - DGM4MICCAI: Deep Generative Models
- **2022 NeurIPS: Conference on Neural Information Processing Systems**
  - Medical Imaging Meets
  - Vision Transformers: Theory and Applications
- **2022 ICKD: International Conference on Knowledge Discovery**

Teaching Assistance

- EEE 443/543: Neural Networks
- EEE 211: Analog Electronics
- EEE 212: Microprocessors

Computer Skills

Programming Languages: Python, MATLAB, Java, C++
Frameworks: PyTorch, TensorFlow, NumPy, Matplotlib, OpenCV
Tools: LATEX, Git, Spyder, Inkscape