Hasan Atakan **Bedel**

Medical Image Analysis, Deep Learning

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EDUCATION

Bilkent University, Ankara, Turkey | M.Sc., Electrical and Electronics Engineering   2021-Present
Advisor: Prof. Tolga Çukur, **CGPA:** (4.00/4.00)

Middle East Technical University, Ankara, Turkey | B.Sc., Electrical and Electronics Engineering   2016-2021
CGPA: (3.97/4.00)

Middle East Technical University, Ankara, Turkey | Minor, Computer Engineering   2016-2021
CGPA: (4.00/4.00)

PUBLICATIONS (GOOGLE SCHOLAR)

Journal Articles

DreaMR | Diffusion-driven Counterfactual Explanation for Functional MRI   ⌂

Bedel, H. A., & Çukur, T., "DreaMR: Diffusion-driven Counterfactual Explanation for Functional MRI," under review *IEEE Transactions on Medical Imaging*, Jul 2023.

BolT | Fused Window Transformers for fMRI Time Series Analysis   ★18 ⌂

Bedel, H. A., Sivgin, I., Dalmaz, O., Dar, S. U., & Çukur, T., "BolT: Fused Window Transformers for FMRI Time Series Analysis," in *Medical Image Analysis*, Aug 2023.

SynDiff | Adversarial Diffusion for Medical Image Translation   ★95 ⌂

Özbey, M., Dalmaz, O., Dar, S. U., **Bedel, H. A.**, Öztürk, Ş., Güngör, A., Çukur, T., "Unsupervised Medical Image Translation with Adversarial Diffusion Models," in *IEEE Transactions on Medical Imaging*, Jun 2023.

AdaDiff | Adaptive Diffusion Priors for Accelerated MRI Reconstruction   ★16 ⌂

Güngör, A., Dar, S. U., Öztürk, Ş., Korkmaz, Y., **Bedel, H. A.**, Elmas, G., ... & Çukur, T., "Adaptive Diffusion Priors for Accelerated MRI Reconstruction," in *Medical Image Analysis*, Jun 2023.

GraphCorr | A Plug-in Graph Neural Network for fMRI Analysis

Sivgin, I*, **Bedel, H. A.***, Öztürk, Ş., & Çukur, T. (2023), "A Plug-In Graph Neural Network to Boost Temporal Sensitivity in fMRI Analysis," under revision *Journal of Biomedical and Health Informatics*, Jun 2023. *:equal contribution

Peer-Reviewed Conference Proceedings

Bedel, H. A. , Sıvgın, I., Dalmaz, O., Dar, S. U. H., and Cukur, T., "Fused Window Attention for Sensitive fMRI Data Analysis" in 31st annual meeting of International Society for Magnetic Resonance Imaging (ISMRM), Toronto, Jun 2023. (oral, Presented on-site)

Dalmaz, O., Özbey, M., **Bedel H. A.**, Dar, S. U. H., Öztürk Ş., Güngör, A., and Çukur, T., "Cycle-Consistent Adversarial Diffusion For Unsupervised Medical Image Translation," in IEEE 20th International Symposium on Biomedical Imaging (ISBI), Virtual Conference, Apr. 2023. (Presented online)

Özbey, M., Dalmaz, O., **Bedel, H. A.**, Dar, S. U. H., Özturk, Ş., Güngör, A., and Çukur, T., "Adversarial Diffusion Models for Unsupervised Medical Image Synthesis," NeurIPS Medical Imaging Meets, Virtual Conference, Dec. 2022. (Presented online)

ACADEMIC EXPERIENCE

Graduate Research Assistant | National Magnetic Resonance Research Center   2021-Present

I am part of the Imaging and Computational Neuroscience (ICON) Lab. My work is supported by the Scientific and Technological Research Council of Turkey with project grants 121N029 at Bilkent University in Ankara, Turkey.

Graduate Teaching Assistant | Bilkent University, Ankara, Turkey   2021-Present

- EE 321: Signals and Systems (Fall 2023, Spring 2023)
- EE 314: Digital Electronics (Spring 2022)
- EE 202: Circuit Theory (Fall 2021)

Undergraduate Research Assistant | Center for Image Analysis   2019-2021

During my undergraduate studies at Middle East Technical University in Ankara, Turkey, I was involved in the Electrical and Electronic Engineering (EEE) Undergraduate Student Academic Research (STAR) Program under Prof. Dr. Aydin Alatan. We designed and implemented a unique camera setup using Intel Realsense d435i and Intel t265, creating software that could compile a depth-inclusive stereo vision dataset for machine learning applications.

SKILLS

Programming

- AI - Python, Pytorch, Tensorflow, Hugging Face, LangChain
- C/C++ - STL, Pointers, Templates, OOP, Qt(basic)
- Other - JAVA, SQL, MATLAB, HTML, CSS, JavaScript, VueJS, Python

Tools/Others

- Scripting(Bash, Python), git, GitHub Actions, CI/CD, Linux/Unix, Docker
- LaTeX, Visual Studio Code, IntelliJ IDEA, Word, PowerPoint, Excel