

Mehmet Saygın Seyfioğlu

Education

- 2019-ongoing **PhD, Electrical and Computer Engineering**, *University of Washington*, Seattle, WA,
I work at the intersection of vision and language, primarily in the medical domain, and also have research experience in generative diffusion models.
- 2015 **MSc, Electrical and Computer Engineering**, *TOBB ETU*, Ankara, Turkey,
Computer vision research focused on detecting elderly gait for fall prediction using radar.
- 2011 **BSs, Electrical and Computer Engineering**, *TOBB ETU*, Ankara, Turkey.

Experience

- June 2023 - **Amazon**, *Research Scientist Intern*, Seattle, WA.
September 2023 Virtual Try-all with Diffusion Models. Mentors: Karim Bouyarmane.
- August 2022 - **Amazon**, *Research Scientist Intern*, Seattle, WA.
January 2023 Exploring LLMs to generate item titles and item title patterns for Amazon catalog. Developing novel multi-modal architectures for vision and language. Mentors: Karim Bouyarmane.
- 2021 **Amazon**, *Research Scientist Intern*, Seattle, WA.
Research on Vision language self-supervised pre-training (VLP). Developed a novel VLP module that encourages cross-modal interaction, which yields SOTA results on image/text retrieval tasks. Mentor: Tarik Arici.
- 2020 **Amazon**, *Research Scientist Intern*, Seattle, WA.
Research on self/cross attention modules for near-duplicate detection for Amazon Catalog images. Mentor: Tarik Arici.
- 2016-2019 **STM**, *Machine Learning Engineer*, Ankara, Turkey.
Worked on various NLP and Vision projects. Mentor: Erkut Erdem.

Awards

- 2023-2023 Microsoft Accelerate Foundation Models Research Program
- 2021-2022 Garvey Institute for Brain Health Solutions Award
- 2019- Fulbright Fellowship
- 2011-2015 Full-Scholarship from TOBB ETU, given to top 0.5% of students

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Publications

Google Scholar Profile: <https://scholar.google.com.tr/citations?user=65TuoYUAAAAJhl=en>

Ongoing Projects

1. **M. S. Seyfioglu**, K. Bouyarmane, S. Kumar, A. Tavanaei, I. B. Tutar. Virtual Try-all: Zero Shot Inpainting of E-commerce Items, Submitted to CVPR 2023.
2. **M. S. Seyfioglu***, W.O. Ikezogwo*, F. Ghezloo*, R. Krishna, L. Shapiro. Localized Narratives for Histopathology: Leveraging Quilt to Extract Dense Visual Groundings, Submitted to CVPR 2023.
3. W.O. Ikezogwo*, **M. S. Seyfioglu***, F. Ghezloo*, K. Zhang, B. Zheng, R. Krishna, L. Shapiro. Quilt-Med: 10M Image-Text Pairs for Medical Concepts, Submitted to Nature Medicine.

Ph.D. Publications

1. **M. S. Seyfioglu***, W.O. Ikezogwo*, F. Ghezloo*, D. Geva, F. S. Mohammed, P. K. Anand, R. Krishna, L. Shapiro. Quilt-1M: One Million Image-Text Pairs for Histopathology, Neurips 2023.
2. **M. S. Seyfioglu**, K. Bouyarmane, S. Kumar, A. Tavanaei, I. B. Tutar. DreamPaint: Few-Shot Inpainting of E-Commerce Items for Virtual Try-On without 3D Modeling, arxiv, 2023.
3. **M. S. Seyfioglu***, W. O. Ikezogwo*, L. Shapiro. Multi-modal Masked Autoencoders Learn Compositional Histopathological Representations, Machine Learning for Health 2022.
4. **M. S. Seyfioglu**, Z. Liu, P. Kamath, S. Gangolli, S. Wang, T. Grabowski, and L. Shapiro. Brain-Aware Replacements for Supervised Contrastive Learning in Detection of Alzheimer's Disease, MICCAI 2022.
5. **M. S. Seyfioglu**, T. Arici, A. Tavanaei, T. Neiman, Y. Xu, S. Tran, T. Cilimbi, B. Zeng, and I. Tutar. Reconstruct First, Contrast Later If You Need It, submitted to CVPR, 2022.
6. **M. S. Seyfioglu**, T. Arici, T. Neiman, Y. Xu, S. Tran, T. Cilimbi, B. Zeng, and I. Tutar. MLIM: Vision-and-Language Model Pre-training with Masked Language and Image Modeling, arxiv, 2021.
7. N. Nuechterlein, B. Li, **M. S. Seyfioglu**, S. Mehta, P. J. Cimino, and L. Shapiro. Leveraging Unlabeled Data for Glioma Molecular Subtype and Survival Prediction, ICPR, 2020.

Selected Publications from Earlier Work

1. S. Yagcioglu, **M. S. Seyfioglu**, B. Bardak, B. Citamak, S. Guldamlasioglu, A. Yuksel, E. I. Tatli, Detecting Cybersecurity Events from Noisy Short Text, NAACL, 2019
2. **M. S Seyfioglu**, B. Erol, S.Z. Gurbuz, and M.G. Amin, DNN transfer learning from diversified micro-Doppler for motion classification, IEEE Transactions on AES, 2018

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3. **M. S Seyfioglu**, B. Erol, S.Z. Gurbuz, and M.G. Amin, Diversified radar micro-Doppler simulations as training data for deep residual neural networks, IEEE Radar Conference, 2018
4. **M. S Seyfioglu**, A. M. Ozbayoglu, S.Z. Gurbuz, Deep convolutional autoencoder for radar-based classification of similar aided and unaided human activities, IEEE Transactions on AES, 2017
5. **M. S Seyfioglu**, S.Z. Gurbuz, Deep neural network initialization methods for micro-Doppler classification with low training sample support, IEEE GRSL, 2017