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

2023 — **Amazon**, *Research Scientist Intern*, Seattle, WA.
Virtual Try-All with Diffusion Models. Mentors: Karim Bouyarmane.

2022 — **Amazon**, *Research Scientist Intern*, Seattle, WA.
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 projects at the intersection of vision and language. Mentor: Erkut Erdem.

Awards

2023-2023 — Microsoft Accelerate Foundation Models Research Program
2021-2022 — Garvey Institute for Brain Health Solutions Award
2019-2021 — Fulbright Fellowship

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Publications

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

Ph.D. Publications

1. **M. S. Seyfioglu**, K. Bouyarmane, S. Kumar, A. Tavanaei, I. B. Tutar. Diffuse to Choose: Enriching Image Conditioned Inpainting in Latent Diffusion Models for Virtual Try-All, https://diffuse2choose.github.io

2. **M. S. Seyfioglu***, W.O. Ikezogwo*, F. Ghezloo*, R. Krishna, L. Shapiro. Quilt-LLaVA: Visual Instruction Tuning by Extracting Localized Narratives from Open-Source Histopathology Videos, https://quilt-llava.github.io

3. **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 **Oral** 2023.

4. **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.

5. **M. S. Seyfioglu***, W. O. Ikezogwo*, L. Shapiro. Multi-modal Masked Autoencoders Learn Compositional Histopathological Representations, Machine Learning for Health 2022.

6. **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 Oral 2022.

7. **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.

8. N. Nuechterlein, B. Li, **M. S. Seyfioğlu**, 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

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