Mehmet Arif Demirtaş

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Summary

I am a first-year Ph.D. student at UIUC, and I am interested in exploring **cognitive processes of learners** as they learn programming, and designing inclusive learning environments that improve the experiences of **learners with diverse backgrounds and goals** by intersecting methods from **human-computer interaction**, **artificial intelligence**, and **computing education research**.

Education

Ph.D., Computer Science, *University of Illinois, Urbana-Champaign*, Illinois, US — Sep '23 –
- **Research Interests:** Computing Education Research, Human Computer Interaction

BSc., Computer Engineering, *Istanbul Technical University*, Istanbul, Turkey — Sep '18 – Jan '23
- **GPA: 3.94/4.00**

Experience

Graduate Research Assistant, *University of Illinois, Urbana-Champaign* — August '23 –
- Working with **Dr. Katie Cunningham** to analyze what units of knowledge novices acquire in introductory programming courses.

Research Engineer, *Vitamu* — April '22 – June '23
- Developed deep learning models for breast cancer detection and localization from mammograms using **PyTorch** and deployed them to **AWS** and **Google Cloud**.

R&D Engineer, *Yapi Kredi Teknoloji* — August '21 – April '22
- Worked in the NLP team of the R&D department of the IT subsidiary of Turkey's third largest bank, contributed to document processing pipeline with an approach for parsing relations between pages in multi-page trade documents based on multimodal embeddings, presented at **ICPR 2022**.

Research Intern, *University of Illinois, Urbana-Champaign* — June '21 – March '22
- Developed a test generation framework for autonomous driving systems in **Python** with **Dr. Reyhaneh Jabbarvand**.

Research Intern, *Istanbul Technical University* — Dec '20 – May '21
- Designed a novel method based on geometric deep learning on brain graphs for behavioral score prediction in **BASIRA Lab** with **Dr. Islem Rekik**, co-authored the paper explaining the method, published in Brain Imaging and Behavior.

Publications

M. A. Demirtaş, B. Oral, M. Y. Akpınar, and O. Deniz. Semantic parsing of interpage relations. In *26th International Conference on Pattern Recognition*, 2022. URL https://arxiv.org/abs/2205.13530.

M. Hanik, M. A. Demirtaş, M. A. Gharsallaoui, and I. Rekik. Predicting cognitive scores with graph neural networks through sample selection learning. *Brain Imaging and Behavior*, 16(3):1123–1138, 2022. URL https://doi.org/10.1007/s11682-021-00585-7.

A. Waibel, M. Behr, F. I. Eyiokur, D. Yaman, T.-N. Nguyen, C. Mullov, M. A. Demirtas, A. Kantarcı, S. Constantin, and H. K. Ekenel. Face-dubbing++: Lip-synchronous, voice preserving translation of videos. *arXiv preprint arXiv:2206.04523*, 2022. URL https://arxiv.org/abs/2206.04523.

S. Yürekli, M. A. Demirtaş, and I. Rekik. Quantifying the predictive uncertainty of regression gnn models under target domain shifts. In *International Workshop on PRedictive Intelligence In MEdicine*, pages 149–159. Springer, 2022. URL https://doi.org/10.1007/978-3-031-16919-9_14.