Mehmet Arif Demirtas

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Summary

I'm **Arif** (he/him)! In my research, I explore how students learn programming and design tools to support flexible instruction and evaluation by using human-computer interaction and educational data mining methods.

Education

University of Illinois Urbana-Champaign *Aug 2023 – (Exp.) May 2028*
Ph.D., Computer Science

- **Thesis Advisor:** Dr Katie Cunningham
- **Research Interests:** Computer Science Education, Human-Computer Interaction

Istanbul Technical University *Sep 2018 - Jan 2023*
BSc., Computer Engineering

- **Thesis Project:** *Automated Realistic Lip Sync Generation for Unconstrained Videos*, advised by Dr Hazim Kemal Ekenel

Experience

Research Engineer *London, UK (Remote)*
Vitamu *April 2022 – June 2023*

- Trained breast cancer detection and localization algorithms using **PyTorch** in a startup environment
- Trained and deployed deep learning models with **FastAPI** on **Google Cloud** for inference
- Migrated development architecture from **AWS** to **Google Cloud** and refactored development environments

R&D Engineer *Istanbul, Turkey*
Yapi Kredi Teknoloji *Aug 2021 – April 2022*

- Worked in the **NLP** team of the R&D department of Turkey's third largest bank
- Contributed to a ML pipeline written with **PyTorch** that processes more than 10k documents per day
- Integrated new classifiers into the existing microservice architecture with **Java**
- Designed a novel approach for parsing multi-page documents with multimodal embeddings, presented at **ICPR 2022**

Selected Publications

PLAID: Supporting Computing Instructors to Identify Domain-Specific Programming Plans at Scale

2025 ACM Conference on Human Factors in Computing Systems (CHI 2025)
Yoshee Jain*, **Mehmet Arif Demirtas***, Kathyrn Cunningham

Validating, Refining, and Identifying Programming Plans Using Learning Curve Analysis on Code Writing Data

2024 ACM Conference on International Computing Education Research (ICER 2024)
Mehmet Arif Demirtaş, Max Fowler, Nicole Hu, Kathyrn Cunningham

Reexamining Learning Curve Analysis in Programming Education: The Value of Many Small Problems

17th International Conference on Educational Data Mining (EDM 2024)

Mehmet Arif Demirtaş, Max Fowler, Kathyrn Cunningham

Semantic Parsing of Interpage Relations

26th International Conference on Pattern Recognition (ICPR 2022)
Mehmet Arif Demirtaş, Berke Oral, Mehmet Yasin Akpınar, Onur Deniz

Predicting cognitive scores with graph neural networks through sample selection learning

Brain Imaging and Behavior 16, 3 (2021)
Martin Hanik*, **Mehmet Arif Demirtaş***, Mohammed Amine Gharsallaoui, Islem Rekik

Skills

Code & Technologies: Python, PyTorch, JavaScript, C++/C, HTML/CSS, Docker, Bashscript, AWS/Cloud Technologies

Research Methods: Mixed Methods Research, Semi-structured Interviews, Think-aloud Studies, Educational Data Mining, Student Modeling

Professional Development

Panel, SIGCSE Virtual 2024 *December 2024*

- Moderated the panel *Challenges and Solutions for Teaching Decomposition and Planning Skills in CS1*, with Dr Eliane S Wiese, James Finnie-Ansley, Dr Rodrigo Duran, Dr Kathryn Cunningham

Doctoral Consortium, EDM 2024 *July 2024*

- Attended the doctoral consortium program at EDM 2024, led by Dr Neil Heffernan
- Presented *Identifying and Evaluating Novel Knowledge Component Models for Programming Skills* as a poster

Doctoral Consortium, SIGCSE Virtual 2024 *December 2024*

- Attended the doctoral consortium program at SIGCSE Virtual 2025, led by Dr Colleen Lewis and Dr Lauri Malmi

Teaching & Service

Lecturer, ITU ACM Student Chapter *Sept 2022 - Dec 2022*

- Held introductory Python lectures and supervised hands-on tutorial sessions for more than 100 students.

Guide & Mentor, inzva.com ↗ *Oct 2021 - Nov 2022*

- Contributed to Google Developers Machine Learning Bootcamp and deep learning study groups at inzva hackerspace in Istanbul
- Gave lectures on object detection, face recognition, and neural style transfer to more than 100 students as part of the bootcamp
- Mentored more than 30 students in 4-week periods over a year