

Curriculum Vitae

Tuğrul Hasan Karabulut

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Ann Arbor, MI, USA

EDUCATION

- **University of Michigan** Aug 2025 -
Ann Arbor, MI, USA
PhD Computer Science and Engineering
 - Advisor: Prof. Danai Koutra
- **Boğaziçi University** Sep 2022 - Jun 2025
Istanbul, Turkey
MSc Computer Engineering
 - Thesis Title: Improving Representation Learning in Graph Neural Networks
 - Advisor: Prof. İnci M. Baytaş
 - GPA: 3.86/4.00
- **Yildiz Technical University** Sep 2017 - Jun 2021
Istanbul, Turkey
BSc Applied Mathematics
 - GPA: 3.61/4.00

EXPERIENCE

- **University of Michigan** Aug 2025 -
Ann Arbor, MI, USA
Graduate Student Research Assistant
 - Part of Graph Mining and Exploration (GEMS) Lab within the Michigan AI Lab.
- **KKB Kredi Kayıt Bürosu** Aug 2021 - Apr 2025
Istanbul, Turkey
Machine Learning Engineer
 - Worked as an R&D AI/ML Engineer.
 - Developed AI projects using Python and popular libraries/frameworks such as scikit-learn, Tensorflow, PyTorch and HuggingFace libraries.
- **Yapı Kredi Technology** Feb 2021 - Jun 2021
Istanbul, Turkey
Software Engineering Intern
- **bidolubaski.com** Feb 2019 - Sep 2020
Istanbul, Turkey
Software Developer (Part-Time)

RESEARCH & TEACHING

- Tuğrul Hasan Karabulut, İnci M. Baytaş (2025). **Local Virtual Nodes for Alleviating Over-Squashing in Graph Neural Networks**. Work under review.
- Tuğrul Hasan Karabulut, İnci M. Baytaş (2024). **Channel-Attentive Graph Neural Networks**. In *IEEE International Conference on Data Mining*, Oral Presentation.
- Served as a TA for the course "Introduction to Probability and Statistics for Computer Engineers" at Boğaziçi University, Computer Engineering Department, Fall 2024.

SKILLS

- **Programming Languages:** Python, C, JavaScript, Java
- **Software Development Tools:** Git, Linux, Docker, Relational DBs (MySQL, Oracle, PostgreSQL), Graph DBs (MongoDB, ArangoDB), FastAPI, Flask, Hadoop/HDFS, Kafka, Airflow
- **ML Tools:** PyTorch, PyTorch Geometric, Weights & Biases, NetworkX

VOLUNTEER EXPERIENCE

- **Mentor** Sep 2022 - Jun 2024
YTU Mentorship Club
 - Mentored two undergraduate students from Yildiz Technical University, providing guidance on academic development and career opportunities.