

HASAN ALP CAFEROGLU

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EDUCATION

Bilkent University, Ankara, Turkey January 2023 - June 2025 (Expected)

Master of Science in Computer Science; GPA: 3.94/4.00

Courses: Algorithms, Deep Learning, Machine Learning, Artificial Intelligence, Information Retrieval, Web Search, Computer Vision, Data Science for Software Engineering, Cloud Computing

Bilkent University, Ankara, Turkey January 2023 - August 2023

Academic Preparation Program in Computer Science; GPA: 3.93/4.00

Courses: Fundamental Structures of Computer Science I, Fundamental Structures of Computer Science II, Programming Languages, Database Systems

Middle East Technical University, Ankara, Turkey 2016 - 2021

Bachelor of Science in Mechanical Engineering; GPA: 3.63/4.00 - High Honor

SKILLS

Programming Languages: Python (NumPy, Pandas, Scikit-learn, TensorFlow, PyTorch, Flask), JavaScript (React, Next.js), Java, C++, SQL (MySQL)

Cloud Computing: AWS (VPC, EC2, ECS, S3, RDS, Lambda, Amplify, Cognito, API Gateway, SES, IAM, WAF, CloudTrail)

Data Processing: Apache Spark, Apache Airflow, Apache Kafka

Technologies: Hugging Face, MongoDB, Docker, Vercel, Stripe, OpenAI API

WORK EXPERIENCE

Bilkent University, Ankara, Turkey January 2023 - Present

Teaching and Research Assistant

- Courses: CS101 Algorithms and Programming, CS115 Introduction to Programming in Python, CS353 Database Systems

Epicflow.io, USA (Remote) October 2022 - March 2023

Full Stack Web Developer

- Worked on integrating authentication and payment systems. Developing frontend and backend of the application.

- (JavaScript, React, AWS Cognito, AWS Lambda, Stripe)

ASELSAN, Ankara, Turkey September 2021 - March 2023

Mechanical System and Design Engineer

Middle East Technical University, Ankara, Turkey August 2020 - September 2020

Undergraduate Student Researcher

PUBLICATIONS & PREPRINTS

- H. A. Caferoğlu, O. Ulusoy. *E-SQL: Direct Schema Linking via Question Enrichment in Text-to-SQL, 2024.* (In Submission)
[PDF] [Code]

PROJECTS

Text-to-SQL Translation Using LLMs June 2024 - Present

Developing a challenging NLP application utilizing large language models (LLMs) for translating natural language queries into SQL statements (i.e., NL2SQL). This approach significantly lowers the barriers to accessing relational databases by parsing and understanding the structure of natural language to accurately generate corresponding SQL queries.

(Python, PyTorch, Hugging Face, OpenAI API)

Image Segmentation with R2U-Net 🐙 🌐 January 2024 - May 2024

Implemented a Recurrent Residual Convolutional Neural Network based on U-Net (R2U-Net) and trained and tested it on the Oxford-IIIT Pet dataset for image segmentation.

(Python, PyTorch)

GelGit Travel: A Cloud-Native Application 🌐 🌐 January 2024 - May 2024

Gelgit Travel is a cloud-native application which showcases transportation ticket management and purchase platform. It is developed to learn and utilize fundamental AWS cloud services.

(VPC, EC2, RDS, API Gateway, Lambda, Cognito, SES, Amplify, IAM, WAF, CloudTrail, CloudWatch)

NLIDB Keyword Mapping 🌐 🌐 October 2023 - January 2024

An NLP application that employs weak-supervision techniques to identify the relation between natural language query tokens and database entities, treating the keyword mapping problem as a sequence tagging problem using pre-trained language models like BERT and T5.

(Python, PyTorch, Hugging Face)

Stance Detection - Stream Data 🌐 🌐 October 2023 - January 2024

A Stance Detection project that identifies the attitude of a textual content under the changing nature of the data. Adaptive model which tries to maintain its accuracy overtime by fine-tuning itself using new data.

(Python, PyTorch, Tensorflow, Hugging Face)

HONORS AND AWARDS

Bilkent University Comprehensive Scholarship

Full tuition waiver, stipend, health insurance, and accommodation during M.Sc.

January 2023 - Present

CERTIFICATES

- IBM ETL and Data Pipelines with Shell, Airflow, and Kafka (Credential ID: QNAJ4F6P46FA)
- IBM Introduction to Big Data with Spark and Hadoop (Credential ID: H8XX69LC8LQV)
- DeepLearning.AI Deep Learning Specialization (Credential ID: TY5EEQVRBT8H)

EXTRACURRICULAR ACTIVITIES

METU Business Club, Ankara, Turkey

Leadership Committee Coordinator & Active Member

June 2026 - Jan 2018