

TOLGA IZDAS

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EDUCATION

Master of Science in Computer Science
University of Southern California

Aug 2025 – Present
Los Angeles, CA

Bachelor of Science in Computer Engineering
Yildiz Technical University

Sep 2022 – Jun 2025
Istanbul, Turkiye

- GPA: 3.64/4.0 (Graduated with high honors)
- Relevant Coursework: Big Data Processing and Analytics, Artificial Intelligence, Image Processing

PROFESSIONAL EXPERIENCE

Software Engineer Intern
Turk Telekom

Jul – Sep 2024
Izmir, Turkiye

- Designed and implemented an SQLite database from scratch for company inventory management.
- Developed a user interface for inventory management using Django.
- Improved the data retrieval and processing speeds, contributing to more efficient inventory management.

Software Engineer Intern
SESTEK

Jul – Sep 2023
Istanbul, Turkiye

- Developed voice input summarization and topic extraction tools using JavaScript and OpenAI's API.
- Designed and implemented a module for real-time HTTP data visualization in a web interface.
- Gained insights into agile practices through daily and weekly meetings.

RESEARCH EXPERIENCE

Research Scholar
COSMOS AI Research Group

Jul 2024 – Mar 2025
Istanbul, Turkiye

- Conducted benchmarks on large language models (LLMs) using few-shot learning.
- Created datasets for evaluating text generation models, ensuring high-quality data.
- Fine-tuned LLMs, improving Recall@k scores by 10% in Retrieval-Augmented Generation (RAG) tasks.

PROJECTS

Movie Recommendation System | FastAPI, React.js, AWS, Firebase, PostgreSQL

Feb 2025

- Built a full-stack movie recommendation app with user sign-up and personalized suggestions.
- Developed RESTful APIs for handling user data, movie catalog, and recommendations.
- Integrated collaborative filtering for recommender system.

COSMOS LLM Evaluation Tool | PyTorch, Object-Oriented Programming (OOP)

Jul 2024

- Developed a tool to evaluate LLMs (GPT, BERT, LLaMA) on various tasks with few-shot learning support.
- Implemented custom evaluation metrics for accuracy and perplexity.
- Established an OOP architecture to allow easy integration of additional models and evaluation tasks.

Occupation Prediction from Twitter Data | TensorFlow, Machine Learning (ML)

Mar 2024

- Developed a natural language processing (NLP) project to analyze and classify social media data.
- Used ML models such as Logistic Regression, Support Vector Machines (SVMs), Random Forest, Convolutional Neural Networks (CNNs), and Recurrent Neural Networks (RNNs).
- Explored the impact of dataset size on model performance, achieving 89% accuracy in classification tasks.

PUBLICATIONS

- T. Izdas et al. (2025). “Turkish-e5: E5 Model Enhanced for Turkish with Multi-Positive Contrastive Learning.” *33rd IEEE Conference on Signal Processing and Communications Applications (IEEE SIU)*.
- T. Izdas, H. Iskifoglu, and B. Diri (2024). “Occupation Prediction from Twitter Data.” *Dokuz Eylul University Faculty of Engineering Journal of Science and Engineering (DEU FMD)*.

COURSEWORK

Big Data Processing and Analytics

- Gained hands-on experience with distributed systems, large-scale data processing, and recommender systems.
- Completed a project that evaluated the performance of Apache Hadoop in processing large datasets by applying various statistical functions.

Artificial Intelligence

- Studied fundamental AI concepts, including search algorithms, optimization methods, gradient descent, and stochastic processes.
- Implemented various projects using Genetic Algorithms and Q-Learning techniques to solve complex problems and enhance decision-making in AI systems.

Information Retrieval and Web Search Engines

- Investigated web mining techniques to analyze and extract valuable insights from social media data.
- Implemented IR algorithms to effectively extract relevant information and enhance search functionalities.

AWARDS AND HONORS

STAR Intern Researcher Scholarship

TUBITAK (Scientific and Technological Research Council of Türkiye)

Awarded a scholarship as a research intern in the project titled “New Approaches for Text Representation and Text Generation with Neural Language Models” conducted by Prof. Mehmet Fatih Amasyali at Yildiz Technical University Computer Engineering Department.

Jul 2024

ACCOMPLISHMENTS

National Science Olympiads in Computer Science

TUBITAK (Scientific and Technological Research Council of Türkiye)

Ranked 55th out of 600 students in the National Science Olympiads in Computer Science.

May 2019

CERTIFICATIONS

- Red Hat System Administration I & II - RH124 & RH134
- Red Hat OpenShift I: Containers & Kubernetes - DO180

SKILLS

- **Programming Languages:** Python, Java, C, SQL, JavaScript, MATLAB
- **Libraries:** TensorFlow, PyTorch, NumPy, Pandas, Keras, scikit-learn, Matplotlib, Django, Apache Hadoop, Apache Spark
- **Tools:** Git, Google Colab, Hugging Face, Kaggle, PyCharm, Jupyter Notebook

LANGUAGES

- **Turkish:** Native
- **English:** Fluent