

# 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

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- 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

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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

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STAR Intern Researcher Scholarship Jul 2024  
*TUBITAK (Scientific and Technological Research Council of Turkiye)*

- 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.

ACCOMPLISHMENTS

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National Science Olympiads in Computer Science May 2019  
*TUBITAK (Scientific and Technological Research Council of Turkiye)*

- Ranked 55<sup>th</sup> out of 600 students in the National Science Olympiads in Computer Science.

CERTIFICATIONS

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- Red Hat System Administration I & II - RH124 & RH134 Jan 2025
- Red Hat OpenShift I: Containers & Kubernetes - DO180 Jan 2025

SKILLS

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- **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

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