

Onur Demirel

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EDUCATIONAL BACKGROUND

Bachelor's Degree	Hacettepe University, Computer Engineering GPA: 3.76	Fall 2022 – Present
	Atılım University, Computer Engineering Cryptography Minor GPA: 3.77	Fall 2020 - Spring 2022

RESEARCH EXPERIENCE

Hacettepe University Department of Computer Engineering

Undergraduate Researcher - DREAM Project - Parallelization of data
compression on different parallel processing systems

March 2023 – March 2024

- Parallelization of LZ0 compression algorithm using POSIX threads, OpenMP on CPU and GPU.
- [Project Page](#) | [Project Repository](#)

Ankara University Kreiken Observatory

Assistant Observer

- Attended observations utilizing T80 and T40 telescopes, performed analysis on gathered data using Ave and AstroImageJ
- Co-authored journal article “A list of minima times of some eclipsing binaries”

June 2018 - January 2019

WORK EXPERIENCE

Raquun IOT ve Yazılım A.Ş., Ankara

Summer Intern

- Learned and became proficient in Vue.JS framework and native JavaScript.
- Gained practical experience on debugging while working on solar energy panel management system software

June 2022 - August 2022

PUBLICATIONS

Journal Article

Ozavci, I., Bahar, E., Izci, D. D., Ozuyar, D., Karadeniz, O., Yorukoglu, O., Sarıgul, H., Gocmen, G., Uzuncam, E., Yalcinkaya, S., Sayar, B., Torun, S., Uzumcu, M. A., Azizoglu, B. S., Nasolo, Y., Yilmaz, M., Senavci, H. V., Kilicoglu, T., Basturk, O., ... Demirel, O. (2019). A list of minima times of some eclipsing binaries. Open European Journal on Variable Stars, 203, 1. Retrieved March 5, 2023, from <http://var.astro.cz/oejv/issues/oejv0203.pdf>.

SKILLS

Programming Languages

Python	Data compilation, analysis, and visualization pandas, numpy, scikit-learn and matplotlib libraries. Web-scraping with Selenium, requests and BeautifulSoup libraries. Data encryption with Cryptodome. Feature extraction using Sentence Transformers. Machine learning using XGBoost, CatBoost, ANNs. Image processing using OpenCV.
C/C++	Process parallelization using pthread library, OpenMP library on CPU and offloading to GPU, MPI.
Java	Interactive GUI design with Java JavaFX.
JavaScript, HTML and CSS	Website design using Vue.JS framework and Bootstrap.
Assembly	Using the Intel 8051 microcontroller to design multiplexers and similar circuits.

OTHER PROJECTS

Phishing Detection with Machine Learning

Using two different pre-trained sentence transformer models, XLM-RoBERTa and SBERT, we trained in total six XGBoost, CatBoost and ANN models on a dataset we compiled.

Personality Classification with K-Nearest Neighbour (KNN) Algorithm

Using numpy and pandas, I implemented a k-nearest neighbours algorithm to predict the personality type of a person using pre-made dataset.

AI Supported Mathematical Modelling of Patents and Development of an Automated Patent Search Program – Ongoing Project

We are developing a tool that uses ElasticSearch and tf-idf to determine the relevant terms and retrieve these patents based on user input that is interpreted using sentence transformer models.

Liquid-Filled Cup Analyzer – Image Processing with Python OpenCV

Using OpenCV library, I developed a basic program that can analyse images of different dark coloured liquid filled cups and containers and interpret their fullness.

Currency Exchange Rate Tracker – Email Bot with Python Webscraping

Using the BeautifulSoup and requests libraries, I created a program that reads the current currency exchange rates from İş Bankası's published page using static webscraping. The program then sends an appropriate email to the user based on the threshold values entered by the user. I further ensured continuous operation by deploying this code on a Raspberry Pi.

DuckHunt Game – Interactive GUI design with Java JavaFX

I recreated the famous Duck Hunt game using JavaFX. In this program, various functions such as cursor change, media playback, and system control can be performed based on user mouse and keyboard inputs.

LANGUAGES

Turkish: Native

English: Full professional proficiency

German: Elementary proficiency

EXTRACURRICULAR ACTIVITIES

IEEE Atılım University Student Branch Computer Society
Chair

October 2020 - June 2022

