Kerem Keptig

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EDUCATION

Julius-Maximilians-Universität Würzburg　　　　　　　　　　　　　　Würzburg, Germany
M.Sc. in Artificial Intelligence & Extended Reality　　　　　　　　Oct 2024 – Oct 2026 (Expected)

Middle East Technical University　　　　　　　　　　　　　　　　Guzelyurt, Cyprus
Bachelor's degree in Computer Engineering, CGPA: 3.09/4.00　　　　　　　　Sep 2019 – Jun 2024

- **Relevant Coursework:** Programming Language Concepts, Software Engineering, Data Structures and Algorithms (C), Probability & Statistics, Image Processing, Data Mining, Software Development with Scripting Languages (Python), Wireless Communications and Network, Linear Algebra

WORK EXPERIENCE

Software Developer Intern　　　　　　　　　　　　　　　　　　　Jul 2023 – Sep 2023
CloudCan　　　　　　　　　　　　　　　　　　　　　　　　　　*Remote – Istanbul*

- Designed and deployed scalable RESTful APIs using Python and Flask on Azure App Service, delivering high-performance endpoints that processed **thousands of requests per minute**.
- Conducted extensive testing and debugging with Postman, optimizing **API response times by 30%**, enhancing **user experience** and backend **efficiency**.
- Architected and maintained a secure, high-availability PostgreSQL database, streamlining **data storage, management**, and **querying processes** for **rapid data access**.
- Safeguarded sensitive user information by implementing robust security measures, utilizing Azure Key Vault for secure storage of credentials and sensitive data.

Student Assistant　　　　　　　　　　　　Apr 2022 – Jun 2022, Apr 2023 – Jun 2023
Middle East Technical University Northern Cyprus Campus　　　　*Part-time – Cyprus, Guzelyurt*

- Answered student queries related to their practical programming exercises
- Explained the topics in **C++, Haskell, and Prolog** programming languages

Software Developer Intern　　　　　　　　　　　　　　　　　　　Jul 2022 – Aug 2022
Demirören Teknoloji　　　　　　　　　　　　　　　　　　　*Remote – Istanbul, Sisli*

- Developed and automated a high-performance IMDb web crawler using **Python** on **AWS**, leveraging **EC2** and **Lambda** to ensure scalability and reliability in data collection.
- Implemented optimized data extraction processes, storing results efficiently as **CSV files in an S3 bucket**, enabling quick and organized data access for analysis.
- Utilized **multi-threading** across multiple servers, resulting in a **16x increase in data extraction speed**, significantly enhancing processing efficiency and reducing wait times.

PROJECTS

ML Gesture-Controlled Slide Navigator | Source Code　　　　Python, NumPy, OpenCV, MediaPipe

- Designed and implemented a complete **machine learning framework from scratch**, featuring a customizable neural network with backpropagation and modular optimizers.
- Integrated a motion preprocessing toolbox with utilities for data cleaning, normalization, and **PCA-based dimensionality reduction** to reduce the dimensionality of feature inputs.
- Developed a real-time gesture recognition system supporting **custom gestures** including Pinch/Spread, Point, and Flip Table (both hands up).
- Performed extensive **hyperparameter tuning** to optimize the neural network architecture and improve generalization.

Web-based Autism Pre-screening Application | Source Code　　JavaScript, Python (Flask), HTML, CSS, SQL

- **Integrated** a webcam-based eye-tracking system into the application, enabling **real-time data acquisition** for enhanced user experience.
- Computed and extracted key metrics from eye-tracking data to facilitate accurate predictive analysis by the machine learning model.
- **Embedded** existing predictive ML models within the application, leveraging computed metrics to **assess ASD likelihood** in individuals.

IMDb Web Crawler | Source Code   Python, Amazon Web Services (AWS)

- **Architected** an automated, cloud-based scraping system using **AWS services** (S3, EventBridge, CloudWatch), efficiently handling **200,000+ IMDb pages** daily.
- Minimized IP bans by deploying **three parallel EC2 instances**, reducing scraping time by **50%** and completing tasks in under **four hours**.
- Established a **parent-child Lambda function** setup for independent executions, enhancing **data retrieval speed** and **system reliability**.

TECHNICAL SKILLS

Languages: Python, Java, C++, C, JavaScript, MATLAB, Haskell, Prolog, Verilog-VHDL, SQL (MySQL, PostgreSQL), HTML5, CSS3, Assembly
Frameworks & Technologies: Amazon Web Services (AWS), Flask, Microsoft Azure, Docker
Developer Tools: Git, PyCharm, VS Code, Postman, Jupyter Notebook, GitHub, GitLab
Other Skills: Object-Oriented Programming (OOP), Data Structures, Algorithms, Machine Learning, REST APIs, Cloud Computing, Agile Methodologies

Achievements

METU High Honor List 2023-2024 (Spring)
METU Honor List 2023-2024 (Fall)
METU Honor List 2022-2023 (Fall)
METU Honor List 2021-2022 (Spring)
METU Honor List 2021-2022 (Fall)

Language Skills

Turkish (Native)
English (Fluent)
German (Beginner)

References

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Prof. Dr. Yeliz Yesilada, Computer Engineering Program, Middle East Technical University, Northern Cyprus Campus yyeliz@metu.edu.tr — +90 392 661 2994