

Mustafa Çataltaş

Computer Engineering Student

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Summary

A Senior Computer Engineering Student who has been dealing with programming for about 5 years. Has been in small and medium scale projects providing code for micro-controllers, communication protocols, Natural Language Processing projects. Also, a programming enthusiastic who is interested in mobile development and web development.

Work Experience

Intern

July 2020 - Sep 2020

MORTEN Bilgi ve İletişim Hiz. A.S.

During my third year internship, I was part of a still ongoing project in which we try to generate meaningful texts.

- Designed database in MongoDB and wrote necessary scripts to retrieve required data.
- Developed a website that visualizes the data with a network graph and lets user query and interact with data.
- Used some machine learning agent to summarize a text and extract meaningful result.

Intern

July 2019 - Sep 2019

ANADOLU BIRLIK HOLDING, IT DEPARTMENT

During my second year internship, I had the chance to analyse the database structure of such a big company as ABH. I was in a team that is assigned to develop and maintain forms and work flow for the company. In this team;

- Developed form applications on .NET framework of C# that uses MS SQL as database
- Developed and designed mobile application for Android that uses SQLite, on Java,
- Be a part of every step of an Internet of Things project that aims to create a smart greenhouse. The project includes MQTT communication protocol, sensors, image processing, NoSQL database to keep data and a web-based dashboard to display data.

Education

Computer Engineering , 4. Year

2016 - Present

Konya Food and Agriculture University

Taken Courses: Data Structures, Algorithms, Object Oriented Programming, C Programming, Basic Electronics, Digital Design, Database Management Systems, Mobile Programming, Programming Languages, Computer Networks, Artificial Intelligence, Computer Organization, Software Engineering, Algorithms, Computer Graphics, Microprocessors, Intro to Machine Learning, Data Science, Operating Systems

IEEE KFAU Student Branch

2017 - Present

Founder Member

Programming Languages and Skills

Java, Android Programming, Python, C/C++, Javascript, C#, Adobe Photoshop, Git, MongoDB, SQLite3

English : Reading: B2, Writing: B2, Speaking: B2, Listening: C1

Publications

Extraction of Product Defects and Opinions from Customer Reviews by Using Text Clustering and Sentiment Analysis, 2020 IEEE International Conference on Big Data (Big Data), doi.org/10.1109/BigData50022.2020.9377851

Projects

- **Academic Graph:** An NLP project where data on academic papers are collected and NLP techniques are applied.
 - MongoDB Database is used to keep & query data.
 - BERT is used to generate extractive summaries and T5 is used to generate abstractive summaries.
 - Keyword extraction is done using count-based methods.
 - Paper clusters are obtained by feeding K-Means algorithm with generated keywords for papers.
 - Knowledge Extraction is done on papers.
- **Product Defect Extractor:** An NLP project where product defects are extracted from customer reviews.

- Reviews are preprocessed for better results.
- Sentiment analysis is used to eliminate reviews that does not contain negative opinions.
- DBScan Algorithm is fed with remaining reviews converted to vectors with TF-IDF.
- Opinion words are extracted with POS-Tagging.
- **IOT-CAM:** An internet of things project which aims to have a smart greenhouse. Parts included:
 - A web-based dashboard developed on React.js to display data and taken images of plants.
 - Micro-controllers (ESP32 and ESP32-Cam) to gather information and pictures of environment.
 - MQTT messaging Protocol to create a communication between microcontrollers and main server.
 - MongoDB NoSQL database to store collected data and images.
- **Exam Helper:** Helps lecturers create exam student lists and helps student find their exam classrooms.
 - Retrieves xls file that contains student list from given Internet, then randomly assign these students to given classrooms. This part is developed on Java.
 - When assigning students to classrooms, saves this information to Firebase to use in mobile app.
 - An android application developed for students to be able learn their exam location.
- **Robotic Arm Controller:** Developed for STM32, written in C,
 - Ultrasonic distance sensor reading
 - Usage of timers
 - Controlling servo motors
 - Analog to Digital Conversion
- **Product Defect Extracter From Reviews:** Developed in Python and SQLite.
 - Tries to extract product defects from user reviews in Amazon.
 - DBScan clustering algorithm for finding frequent product defects.
 - Part-of-Speech Tagging to identify defect words in clusters.
- **Mangala Smart Agent:** A minimax AI agent to play ancient game mangala.
 - Implemented Alpha-Beta Pruning to increase the performance.
 - Found an admissible heuristic to beat opponents
 - Implemented depth limit for the situations where game space is too large to search.
- **Right to Information System:** A system developed for public institution to fulfill their need.
 - Database part developed in MS SQL.
 - Application part developed in Java, SQL connection with JDBC Library.
- **Traffic Light Controller:** Developed a electrical circuit that simulates traffic lights in a conjunction.
 - Includes simulation on Verilog Hardware Description Language and actual circuit on breadboard.
 - Implemented a timer with 1 Hertz, a 15 Down Counter with flip-flops, display remaining time with seven segment displays.
- **Word Keeper:** A mobile application developed for Android.
 - Flexible UI provided by usage of fragments, RecyclerView, dialogs and activities.
 - Uses Yandex Translate API and Dictionary API to gather information about words.
 - Uses SQLite3 with Room Persistence Library to store words locally.

References

Assist. Prof. Dr. Fatih NAR, Academic Advisor
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