Ayça Begüm Taşçıoğlu

PhD student at University of Bologna, in Computer Science and Engineering

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- https://www.github.com/aeyc

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Hard Skills

Java
C++
Python
C
PHP
Assembly Language
SQL
Javascript
CSS
HTML
MATLAB

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Languages

Turkish (native)

English (Full professional proficiency)

German (Limited working proficiency)

Russian (Limited working proficiency)

Experience

July 2022 - November 2022   **DXC Luxoft Germany**
Automotive Embedded Software Engineer
Worked on an autonomous driving project with a team located in Munich/Germany.

March 2022 - July 2022   **Mobisec Italia Srl**
Cyber Security Research Intern
Worked on a stand-alone behavior analysis engine to profile device behavior and network traffic to detect anomalies.

September 2021 - July 2022   **Cisco**
Cisco Incubator 9.0 Program Trainee
Worked as a network engineering trainee, in cyber security track

February 2021 - July 2021
Software Engineering Intern   **Unicredit**
Worked on the application of artificial intelligence to physical security events to develop a predictive model.

June 2020 - July 2020
Data Science Intern   **Innova**
Worked on time-series forecasting with Vanilla, Stacked, CNN and Conv LSTM.

March 2020 - May 2020
Software Engineer   **Konneka Bilgi İletişim Teknolojileri**
Worked with Cybersecurity and Machine Learning teams.

January 2020 - August 2020
Data Scientist   **Ratio Technologies**
Worked on the Energy Storage and Optimization project. Preparing energy consumption data sets and analyzing them with different machine learning models which are Linear Regression, SVM and neural networks.

September 2019 - June 2020
Undergraduate Laboratory Assistant   **Bilkent University**
Assisted students with their problems and questions about lab assignments which included Python Programming Language.

August - September 2019
Data Science Intern   **JotForm**
Worked with the Data Science Team to develop a Phishing Detector which is able to detect if a form is spam or safe. I cleaned data according to z-scores of words then analyzed data to implement machine learning with SVM. After my first project, I worked with the SecOps Team on vulnerability issues, particularly on Cross-Site scripting (XSS).

August - September 2018
IT Intern   **Türkiye İş Bankasi**
Worked on virtualization and virtual machines (creating, adding them to the domain and managing their networking preferences) with VMware vSphere Client.

Education

Alma Mater Studiorum - Università di Bologna   2022-Present
PhD, Computer Science and Engineering

Università degli Studi di Padova
Master of Science, ICT for Internet and Multimedia, Telecommunications Engineering   2020-2022

Bilkent University
Bachelor's degree, Computer Science   2016 - 2020

Ankara Ataturk Anadolu Lisesi
High School Diploma, Mathematics and Science   2012 - 2016

Projects

Mobile Behavioral Analysis Engine

A behavioral analysis engine to profile mobile device behavior and detect anomalies. Models with LSTM, Decision Tree, SARIMAX, ARIMA, K-Means Clustering, Isolation Forest and Interquartile Range Algorithm are developed and tested for dynamic analysis. RapidMiner, Disco and Python libraries are used for algorithm development. K-Means Clustering, Isolation Forest and Interquartile Range algorithms are selected for the engine, developed with Python, data is extracted from MongoDB.

https://github.com/aeyc/BehaviorAnalysisEngine

Csion

Csion aims to optimize people's decisions about any subject based on their characteristic behaviors within a short amount of time. Users should take a provided personality test while they register, then ask a question in any subject. With an integrated IBM Watson API, the program will be able to understand the question, and according to the user's personality data, it provides an answer to the given question. The project is developed with Python and JavaScript, as a cross-platform mobile application for both Android and iOS. MongoDB is used for databases.

https://github.com/aeyc/csion

BloomFilter

Bloom Filter to perform approximate membership test for DNA sequences, for Bioinformatics string matching algorithms. The project is developed with Python, with reading sequences given in FASTA format.

https://github.com/aeyc/bloomFilter

Company Review System

Company Interview and Employment Review Platform is a proposed platform form users to give reviews related to companies, jobs, and interview processes. Database system was implemented in Java and with SQL commands the held data were managed. PHP, Javascript and CSS were used for website design. https://github.com/aeyc/Company-Interview-and-Employment-Review-Platform-Database-System

The Wall

Based on a board game - Walls & Warriors, a new desktop game was created in Java with new modes like challenge and developer mode and new levels . Object Oriented Programming is used.

https://github.com/aeyc/CS319-03-Group3E

TDD-GoogleMaps

A responsive page that is developed with Test Driven Development (TDD). It takes coordinates from users or GPS of the device, then shows the location on Google Maps. For another option, it takes coordinates from GPS and calculates the distance between the nearest city center and current location, or it takes coordinates from the user or GPS of the device, then shows the distance between the current location and the Earth Center. Implemented with Google Maps API in Java; for the design of cross-platform websites, PHP, JavaScript, CSS, HTML are used. Created based on Test Driven Development, by JUnit, and Selenium. https://github.com/aeyc/TDD-GoogleMaps

Phishing Detector

A program was designed to detect whether a form was spam or not with supervised learning. With the provided forms which were labeled 'SPAM' or 'NORMAL'. First, I needed to clean my data by tokenization, removing stop words, then keeping data in different dictionaries and initializing z-score for analysis part. Second, in the light of the z-scores of every word, and their labels, I analyzed the words' importance for the classification case. Finally, I used logistic regression, SVM and linear regression models. In my case, I prefer to choose SVM; I separated my data as training and test parts before shuffling. I wrote a prediction function to get output about whether my project works or not and printing confusion matrix, then I finished my project. https://github.com/aeyc/PhishingDetector

Ceramic Tiles for Hybrid Armor

A program for discovering an effective way to place hexagonal and square tiles on hybrid armor, with reinforcement learning from scratch. The algorithm was used as the agent itself. The remaining area in hybrid armor affects the reward. Two Q-Matrices were held as comprehensive Q-Matrix that a matrix with model numbers, in that case, actions were taken based on best models with the highest reward; and local Q-Matrix that a matrix which includes random shape selection, coordinates in canvas and the step number, actions were taken based on best model's best shape and coordinate selection. Greedy Algorithm was used to take actions, and the project was implemented in Python.

https://github.com/aeyc/CeramicTilesForHybridArmor

Panther

A lexical analyzer and a parser. Developed in C language. https://github.com/aeyc/Panther