Yekta Demirci

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EDUCATION

University of Waterloo
MSc in ECE | Software Engineering
09/2019 - 02/2022 | Canada
cGPA: 93%

Middle East Tech. University
BSc in ECE | Software & Networks
08/2014-05/2019 | Turkey
Honour Student, in the top 10%

KAIST - Korea
Exchange Student - 2016
NTU - Singapore
Exchange Student - 2016

SKILLS

Experienced:
Python • C/C++ • Django
Django REST • Strawberry GraphQL
MySQL • Celery • Redis • Postman
Agile, Scrum, Waterfall Methodologies
Competent:
Java • TypeScript • React • JS • HTML
Docker • Git CI/CD • Azure • Selenium
CUDA • open3D • openCV • MRTK

COURSEWORK

Graduate
Algorithm Design & Analysis
Software Systems & Mathematical Logic
Principles of Software Architecture
Data Modelling & Analysis
Computer Networks
Database Systems
Undergraduate
Data Structures
Image Processing
Introduction to Machine Learning

AWARDS & HONOURS

Graduate Research Studentship
University of Waterloo | 2019-2022
Inter. Master's Award of Excellence
University of Waterloo | 2020-2022
Ranked 474th, in the top 0.035%
National University Entrance Exam

SERVICE & LEADERSHIP

Volunteer Mentor | 02-ps/2023
For the earthquake victims, Dayanismafakultesi
Volunteer Tutor | 01-06/2021
Family & Children Service Waterloo
Leader Scout | 2014-2016
METU Scout Team

EXPERIENCE

Interaptix Augmented Reality | Backend Software Engineer | 04/2022-Ps
- Decreased the latency of several endpoints by **10%-300%** after refactoring some database queries and nested serializations; changes both in the **frontend & backend**.
- **Parallelized** a frame-extraction micro-service and achieved **40% faster run-time**.
- Designed an **Object Level Permissions** logic for tree structured db models.
- Implemented **external caching** for some static data using **Redis**.
- Deployed Supervisor process control system to prevent worker failures.
- Implemented a CI runner to track memory usage of an open3D micro-service.
- Integrated **Strawberry-GraphQL** library to replace some **REST** endpoints.
- Tracked and debugged numerous bugs; mostly backend, occasionally frontend.

University of Waterloo | Graduate Research Assistant | 01/2020 - 02/2022
- Supervised by **Prof. Mahesh Tripunitara** and **Prof. Catherine Rosenberg**.
- Implemented L2 schedulers using **open source** platforms w. **large code-bases** in **C/C++**.
- Achieved **%500 less packet latency** and up to **%3 more system throughput** compared to the State of the Art solution under various traffic loads. More details can be found here.
- Implemented a Poisson traffic generator, **UDP clients/servers** with **NTP** in **Python**.
- Prepared guides to set up a **private LTE cellular network** in emulation and hardware.
- Provided new **APIs** to change the state of the schedulers on the fly.

ASELSAN | Software Engineer | 06-08/2019
- Successfully implemented a real-time edge and ball detector with a CLI to enable modifying various parameters (Gauss. Blur window size, sigma etc.) on the fly using built-in **CUDA** modules in **C++** with a JETSON TX2 device. Achieved up to **40 FPS**.
- Matrix multiplication and matrix addition in .cu

University of Washington GEMSEC Lab | Research Intern | 07-09/2018
- Worked with the data-science team of GEMSEC computational biomimetics group.
- Implemented an app that can pre-process various types of metal binding peptide data, creates different tensors, and predicts new ones. An hour run-time for 1000 peptides.
- Used built-in PCA & **self-written wavelet transforms** for feature extraction.
- Analyzed the relation b/w. various properties and metal binding using scikit-learn lib.
- The Report: "A Generalized Similarity Metric for Predicting Peptide Binding Affinity".

PROJECTS

HoloLens 2 fundamentals: developing mixed reality apps | 2022 | Code
- Completed Microsoft HoloLens 2 fundamentals modules to learn the essentials about hand interaction, object tracking, 3D object interaction, eye-tracking and spatial anchors.

Food Hunter Web App | 2021 | Code
- Led the development of a web-app using **agile methods** (Scrum Meetings & Kanban Board) with a group of five people. Tech stack: JS, Python and MongoDB.
- Created Selenium based **unit, integration and system tests**
- Conducted a basic **A/B testing** to choose the most UX friendly interface

Flow level, HTTP-2 Classification with ML Algorithms | 2020 | Report | Code
- HTTP versions were classified with 90% accuracy using only some high level metrics.
- KNN, SVM, CART, ANN models were trained using a large web traffic collection.

Design and Implementation of an Autonomous 2D SLAM Robot | 2018 | Report
- Designed and built a robot with a group of five people as a bachelor capstone project
- Implemented noise-filtering, (novel) pathfinding and object classification algorithms
- Held weekly meetings with the client to understand the needs and provide updates