# Yekta Demirci

Proficient software engineer with an MASc degree, over two years of development experience, certified cloud architect

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## EDUCATION

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

**METU**
BSc in EE | Software & Networks
08/2014-05/2019 | Turkey
cGPA: 3.3 | in the top 10%

**KAIST - Korea**
Exchange Student - 2016

**NTU - Singapore**
Exchange Student - 2016

## SKILLS

Programming languages:
• Python • Modern C++/C • Java
• JavaScript • TypeScript • MySQL
Technologies:
• Django • React • Docker • Azure
• Git • REST APIs • GraphQL • Redis
• CUDA • NoSQL (MongoDB) • Kafka

## COURSEWORK

Graduate
Algorithm Design & Analysis
Software Systems & Mathematical Logic
Software Architecture
Data Modelling & Analysis
Computer Networks
Database Systems
Undergraduate
Data Structures
Image Processing

## AWARDS & HONOURS

**Graduate Research Studentship**
University of Waterloo | 2019-2022
**Inter. Master's Award of Excellence**
University of Waterloo | 2020-2022
**Mevlana Grant**
KAIST | 2016
**Erasmus+ Grant**
NTU | 2016
**Ranked 474th, in the top 0.035%**
National University Entrance Exam

## SERVICE & LEADERSHIP

**Volunteer Tutor** | 01/2021-06/2021
Family & Children Service Waterloo
**Leader Scout** | 2014-2016
METU Scout Team

## EXPERIENCE

**Interaptix Augmented Reality** | Backend Software Eng. | 04/2022-08/2023

- Reduced P99 latency of several endpoints from minutes to milliseconds , achieving **[50-300%]** times faster responses through optimizations, including refactoring database (db) queries, nested serialization and caching; changes in the **frontend & backend**.
- Streamlined a frame extraction service, the most resource-intensive aspect of the business logic, achieving up to a **tenfold**. reduction in run-times through effective.
- Established a CI for monitoring, resulted in a **30%** reduction in memory usage of a ms.
- Re-architectured several **REST** endpoints into **GraphQL** using strawberry library.
- Created a granular permission logic for business-critical features.
- Deployed Supervisor process control system to prevent worker failures for production.
- Implemented **telemetry**, data collection to monitor microservices (ms) on **Azure cloud**.
- Developed several APIs for both customer-facing and internal features.

**University of Waterloo** | Graduate Research Assistant | 01/2020 - 02/2022

- Designed 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**.
- Developed new APIs with the use of **protobuf** to change the system state in real-time.
- Prepared guides to set up a private LTE cellular network in emulation and hardware.
- Supervised by Prof. Mahesh Tripunitara and Prof. Catherine Rosenberg.

**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**.

**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.
- 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".

## SELECTED 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

- Created a web-app using agile methods with a group of five people.
- Created Selenium based unit, integration and system tests, utilized web crawling APIs.

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.

Multi-threaded Inter-Process Communication (IPC) in C++ | 2020 | Code

- Implemented a project that involved **multi-threading** and IPC in **C++**.

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) path-finding and object classification algorithms.
- Held weekly meetings with the client to understand the needs and provide updates.

## CERTIFICATIONS

scrum.org: • PSPO-I • PSM-I  Microsoft: • AZ-305 • AZ-104 • AZ-900