


Yekta Demirci

Proficient software engineer with an MASc degree, over three 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%

Middle East Tech. University

BSc in EE | 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 • Modern C++/C • Java
- Django • Azure • MySQL • Redis
- Django REST • Strawberry GraphQL

Competent:

- TypeScript • React • JS • HTML
- Docker • Kubernetes • RabbitMQ
- CUDA • NoSQL (MongoDB) • Kafka

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 | 2023-PS

To the earthquake victims, Dayanismafakultesi

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 (ms), achieving [50-300%] times faster responses through optimizations, including refactoring database (db) queries, nested serialization and caching; changes in the **frontend & backend**.
- **Parallelized** a frame-extraction micro-service which was the most time-consuming part of the business logic, achieved up to 10 times faster run-times.
- Created a granular permission logic for business-critical features.
- Deployed Supervisor process control system to prevent worker failures for production.
- Re-architected several **REST** endpoints into **GraphQL** using strawberry library.
- Implemented **telemetry** based data collection to monitor microservices on **Azure cloud**.
- Implemented a CI runner to track memory usage of an open3D micro-service.
- 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, 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](#)

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

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 **Concurrent Programming** 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](#)