

# Zahaab Khawaja



Computer Engineering Student at Bilkent University

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## Education

Aug 2019 - Jun 2021

- **IB Diploma Programme**  
**Discovery Centre A Beaconhouse School, Karachi**  
39/45

Sep 2021 - Present

- **BS Computer Engineering**  
**Bilkent University, Faculty of Engineering, Ankara**  
**Courses**

Object-Oriented Software Engineering, Database Systems, Operating Systems, Algorithms I, Automated Program Repair, Programming Languages, Computer Organization.

### Projects

**CampusConnect** – Built with MongoDB, Express, React and Socket.IO for real-time communication. This tech stack ensured a seamless and secure platform for Bilkent University, enabling safe transactions and resource exchange among students and staff while enhancing campus community engagement and security.

**Programmable Processor** – A simple programmable processor using SystemVerilog. The processor architecture supports seven fundamental instructions: Load, Store, Add, Subtract, Ascending Sort, Descending Sort, and Display.

**Command Server Program** – The server is designed in C to execute commands (programs) submitted by clients and return the results to them. This system supports concurrent communication with multiple clients simultaneously.

**Thread Support Library** – A User-Level Thread Support Library (TSL) that enables applications to create and manage threads at the user level built in C. Provided functions for thread creation, management, and context switching within applications.

**Flight Finder** – A text-based C++ application that finds flights based on a flight map graph using a custom designed algorithm. The app uses the STL stack.

## Internships

Feb 2023 - Apr 2023

- **Intern**  
**YD Yazılım, Ankara**

Worked on a VR metaverse application for the Oculus Quest created using Unreal Engine 5. I created a full body character animation based on the inputs from two handheld VR controllers using inverse kinematics.

Employment

Apr 2023 - Sep 2023

Personal Projects

Certificates

Jan 2023

Feb 2023

Skills and Abilities

Full Stack Developer

YD Yazılım, Ankara

Worked on the frontend and backend of a video conferencing application built on mediasoup using WebRTC protocol. The role also included other small projects which included technologies like React, Docker, Node.js and Socket.io.

**MovieCatalog** – A movie catalog application using Spring Boot, Spring Security, React, and MongoDB. Implemented features for easy movie addition, search, and management, providing users with a seamless experience.

**TaskManager-ASP.NET-Core** – This project is a Task Manager API developed using ASP.NET Core. It provides endpoints for managing tasks and user accounts. JWT authentication is implemented for secure access to endpoints, and Swagger UI is integrated for easy testing and documentation.

**LeafletJs React** – This application allows users to save GPS coordinates by clicking on a map, view previously saved points, and download the saved points as a JSON file. It consists of both frontend and backend components, developed separately using React and Node.js.

**Spring Security Demo** – A basic spring web app that uses Bcrypt password encryption and restricts access to certain pages based on a user's role.

**Signal Forwarding Unit (SFU)** – A signal forwarding unit created to increase efficiency of real time connections between users in conference calls. The SFU is created using WebRTC.

**Twitter Tweet Scraper** – A twitter scraper that scrapes a specified hashtag and outputs a json as shown in the hyperlink. The scraper can bypass twitter's bot

**Nest.js CRUD** – A simple CRUD application with login, register, update user and delete user endpoints. The application is connected to MongoDB and has validation, error handling and password hashing.

Spring & Hibernate for Beginners (includes Spring Boot)

Spring Core, AOP, Spring MVC, Spring Security, Spring REST, Spring Boot, Spring Data JPA, Spring Data REST, Thymeleaf and Hibernate all connected to a MySQL database.

HarvardX PH125.8x Data Science: Machine Learning

Basics of machine learning, cross-validation, popular machine learning algorithms, recommendation system, regularization.

- WebRTC

■ Next.js

■ React Native

■ Spring

■ mediasoup
- Flutter

■ React

■ Socket.io

■ Docker

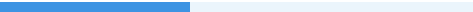
English



Urdu



Turkish



French

