Youssef Essam

Turkey/Istanbul • Open to relocation • youssefessam.dev@gmail.com • +90 531 528 18 45 • https://www.linkedin.com/in/youssef02/

Summary

Software Developer with a solid foundation in C++, JavaScript, and TypeScript, currently focused on full stack web development using React.js and Next.js. Experienced in building responsive user interfaces, RESTful APIs, and scalable applications across both frontend and backend. Previously worked extensively with desktop development using the Qt framework, bringing a strong understanding of UI/UX and software architecture. Passionate about writing clean, maintainable code and solving real-world problems through well-structured software.

Education

Mechatronics Engineering *Sep 2020 - Feb 2025*

Bachelor's Degree - Yildiz Technical University - GPA: 3.02

Experience

Software Developer Istanbul, Turkey, Hybrid

Lenta Marine Underwater Engineering Solutions *Feb 2023 - Present*

• Delivered custom feature updates and maintenance for Pyrot, a production-level fork of **QGroundControl** — **a large-scale open source** ROV control platform built with **Qt (C++/QML)** used by **20+ ROV operators**, improving system usability and operational efficiency.

• Reduced operator error and increased navigation precision by implementing new ROV control modes (e.g., Distance Hold, Collision Avoidance) using **C++** and **object-oriented programming**.

• Improved underwater measurement accuracy to 95.5% by developing a **Python** application for real-time distance estimation based on dual-laser alignment and image processing.

• Streamlined UI/UX for underwater missions by building custom **QML**-based HUD overlays that present critical sensor data without obstructing the operator's field of view.

Lagari UAV team Istanbul, Turkey, Hybrid

Software Developer *Jan 2022 - June 2022*

• Participated in the 2022 **TEKNOFEST** International UAV Competition as part of the software team, developing autonomous flight logic and target detection systems.

• Automated real-time image processing to identify red-colored ground targets from aerial footage using **Python** and **OpenCV**.

• Implemented a geolocation pipeline to convert image-based detections into precise GPS coordinates, enabling autonomous payload delivery.

• Integrated the detection and navigation system into the UAV control software, allowing dynamic mission planning and in-flight payload release.

Projects

Portable Knee Rehabilitation Robot - TUBITAK 2209-B Support Programme *Github: Raspberry Pi Code | Qt Android App Code*

Technologies: **Python, ROS2, Qt (C++/QML)**

• Developed the full control software architecture using **Python** and **ROS2** on a **Raspberry Pi**, enabling modular sensor integration and real-time motor control.

• Created custom PID controllers to support adaptive lower leg rehabilitation exercises.

• Designed and implemented three software modes (Training, Exercise, Impedance) switchable via commands received over **Bluetooth**.

• Built an Android-compatible **GUI** using **Qt/QML** for real-time feedback, mode selection, and knee angle visualization via encoder input.

• Enabled seamless **Bluetooth RFCOMM communication** between the **mobile app** and **Raspberry Pi** to exchange command and sensor data without pairing issues.

Personal Portfolio Website *https://youssefessam.com*

Tech Stack: **React.js**, **Vercel**

• Built a responsive and modern portfolio website to showcase my development work and career journey. The site includes detailed sections for selected projects, including the Portable Knee Rehabilitation Robot, Raspberry Pi applications, and full stack web apps.

Skills

Programming languages : **Python**, **C++**, **JavaScript**, **TypeScript**, **HTML**, **CSS**
Web & Application Frameworks: **React.js**, **Next.js**, **Node.js**, **Qt (C++/QML)**
Tools & Technologies: **Git**, **GitHub**, **Linux**, **ROS2**, **Arduino**, **Raspberry Pi**, **Figma**
Languages: **Turkish (C1)**, **English (C1)**, **Arabic (C1)**