Ege Bilecen

Mechatronics Engineer

Dublin, Ireland
+353 85 189 4421
egebilecen@hotmail.com | LinkedIn | Portfolio | GitHub

I specialize in software development as a mechatronics engineer. I have done a variety of work in various fields, such as desktop programming, embedded programming, web development, and mobile development, using various programming languages. Because of this, I am quite quick to adapt to new projects and new programming languages.

EDUCATION

MEng in Electronic and Computer Engineering (IoT Major) **2023 – 2024**
Master's Degree, Dublin City University Dublin, Ireland

Grade: 1st Class Honours
Master's Project: Rust in the Linux Kernel

Modules:

- OOP with Embedded Systems
- Connected Embedded Systems
- Web Application Development
- Network Stack Implementation
- Security for IoT and Edge Networks
- Real-Time Digital Signal Processing
- Wireless/Mobile Communications
- Data Analysis and Machine Learning

Mechatronics Engineering **2017 – 2022**
Bachelor's Degree, Erciyes University Kayseri, Turkey

GPA: 3.13 / 4.00

SKILLS

- C
- C++
- C#
- Java
- Python
- Rust
- Lua
- PHP
- Javascript
- HTML / CSS
- PLC Programming

KNOWLEDGE

- Embedded Programming
- Socket Programming
- Image Processing
- Cryptography
- GNU/Linux
- Linux Kernel Dev.
- MySQL
- NodeJS
- ReactJS
- Xamarin
- Tauri
- ROS
- Selenium
- Spring Framework
- Chrome Extension Dev.
- Webview Apps
- Windows Forms Apps
- Dear ImGui
- Qt
- Git

PROFESSIONAL EXPERIENCE

bionluk **Oct 2018 – Oct 2022**
Freelance Software Developer Turkey

- Software development in C++, C#, Python, PHP, and Javascript based on customer requests.
- Desktop GUI application development using Qt, Dear ImGui, and Windows Forms.
- Website development using HTML/CSS, Javascript and PHP.
- Completed more than 70 commissions.

LANGUAGES

- **Turkish:** Native
- **English:** Professional Proficiency

PROJECTS & INDIVIDUAL WORK

GNU/Linux Kernel Development

- Misc. character device implementation in C and Rust.
- Kernel customization and compilation.

Home Automation with Mesh Network

- System design of the mesh network.
- Design of the communication infrastructure between nodes, server, and user.
- User application UI design and software development using Xamarin.
- Implementation of the UI features using C#.
- Embedded programming of microchips to communicate with sensors in C++.

Cryptography Algorithms

- Implementation of AES-128 ECB in Python.
- Implementation of PRESENT-80 in C and Python.

RFC 6455 (The Websocket Protocol)

- Implementation of the RFC 6455 (The Websocket Protocol) in Python.
  TLS support is omitted.

Unmanned Aerial Vehicle (Drone) **Mar 2021 – Sep 2021**

- Electrical system design of the UAV.
- Calculations to select appropriate parts of the UAV, such as batteries, propellers, and motors, based on requirements.

I worked on this project when I attended the TUBITAK International Unmanned Aerial Vehicle Competition 2021.

Unmanned Aerial Vehicle (Drone) & Model Satellite **Nov 2019 – Sep 2020**

- Creating wrapper around the MAVLink protocol in Python for interacting with the UAV.
- Autonomous movement implementation of the UAV using the custom wrapper around the MAVLink protocol in Python.
- I2C and SPI sensor implementations in Python on an embedded GNU/Linux device.

I worked on this project when I attended the TUBITAK International Unmanned Aerial Vehicle Competition 2020 and the TUBITAK Model Satellite Competition 2020.

Unmanned Ground Vehicle **Feb 2019 – May 2020**

- Telemetry implementation of the UGV in C#.
- Camera data transmission implementation of the UGV in C#.
- Implementation of image processing algorithms to track entities such as humans, objects, etc. in Python.