Mertcan Özdemir

mertcanozdemir.github.io linkedin.com/in/mertcanozdemir mertcanozdemir@yahoo.com

About Me

As a biomedical engineer, I am passionate about utilizing my skills to support a progressive and visionary organization. I possess a strong problem-solving ability and thrive in a collaborative work environment to produce outcomes. I am enthusiastic about joining a team that aligns with my principles and is committed to creating a favorable impact in the BME field.

Education

TOBB University of Economics and Technology January 2025
PhD Biomedical Engineering

TOBB University of Economics and Technology January 2019
M.S. Biomedical Engineering

TOBB University of Economics and Technology April 2017
B.S. Biomedical Engineering

Coursework

Courses Given: Biomedical Sensors and Transducers Course + Lab., Biomedical Instrumentation Lab., Physics 102 Lab.
Honours and Awards: TOBB ETÜ Scholarship (2x), National Athlete Scholarship, B.S. Final Project Award

Experience

R&D Engineer | *Okuman Medikal Sistemler, Ankara* April 2020 – Nov. 2023

- I researched the latest BME journals to report knowledge to the project team, and followed biomedical device standards, primarily IEC 60601, to guide product development.
- I have created over three project proposals to secure funding and developed a project management plan.
- STM32 ARM Cortex-M4 and H7 series MCUs are used, with skills in digital communication such as I2C, UART/USART, SPI, and QuadSPI. Experience with freeRTOS.
- Doxygen was used for documentation and TortoiseSVN for version control, meeting ISO 62304 standards for the MD software lifecycle.
- Conducted clinical research on three devices to meet MDR requirements and performed data analysis.
- I have completed the pre-release testing and validation reports for the new products.

University Research Assistant | *TOBB University of Economics and Technology, Ankara* May 2017 – April 2020

- I assisted the supervisor with BME projects, lab courses, and documentation.
- I am experienced in teaching Biomedical Instrumentation and Biomedical Imaging.
- I have extensive experience programming machine learning algorithms using MATLAB add-ons and various Python libraries, including scikit-learn and TensorFlow.

Biomedical Engineering Intern | *SIEMENS Healtineers, Istanbul* April 2015 – Aug. 2015

- I supported field service engineers in maintaining and repairing MRI and CT imaging devices while also applying my knowledge of medical imaging theory.

Skills

Prog. Languages: C/C++, Python, MATLAB, HTML/CSS, LaTeX

Tools: VS Code, PyCharm, Git/GitHub/TortoiseSVN, MATLAB/Simulink, Altium Designer, SolidWorks

Frameworks: STM32CubeIDE, TouchGFX, Microchip Studio, Thonny, PlatformIO IDE, Jekyll(Ruby)

Speaking Languages: Native Turkish, Proficient English, Basic German

Projects

Endotracheal Tube Cuff Pressure Monitoring | *STM32CubeIDE, TouchGFX, MATLAB, TortoiseSVN* Aug. 2023

- The plan and proposal for this project, which is funded by the government, has been created and finalized.
- I have designed a system that fulfills all the project requirements.
- I integrated the ISO 62304 standard into a medical device with expertise and ensured regulatory compliance.
- Laboratory equipment, the Teledyne Lecroy WaveRunner 9000, is being used for prototype testing.

Pulse Oximeter Controlled Conscious Sedation Device | *Qt, Altium Designer, Simulink, SolidWorks* Dec. 2022

- The objective is to create and launch a sedation device primarily in dental care.
- I created a PCB circuit for a proportional valve driver using Altium Designer.
- I utilized C++ programming language to design the graphical user interface (GUI) of the device.

O2-Monitored Transport Incubator | *Fluke Biomedical Test Devices, MS Prject* June 2022

- The project aims to develop a transport incubator for newborns that will help achieve and maintain their body temperature in two different modes.
- Our team successfully conducted extensive research on the transportation of incubators. We managed our teams effectively, tested numerous prototypes, and shared our biomedical findings with project personnel.
- As a result, we have gained valuable insights into this field and are confident in our ability to provide reliable and efficient solutions.

Publications

To access my academic publications, please click on **Scholar**.
Patent: The patent is for a "Thermal Monitoring System" that uses sensors to monitor infants' safety in radiant heating devices. Link: **WO2023163682A1**

Hobbies and Interests

Ice Hockey
I have been selected multiple times to represent Turkey on the national team. I established and guided the TOBB ETU Ravens. As the team captain, I organized a training program introducing several players to skating for the first time. I assisted the team in reaching the Unileague Finals for the first 3 seasons.

Discovering and Networking
I enjoy discovering new cultures, exploring unfamiliar places, and connecting with people from around the globe. Meeting individuals from diverse backgrounds provides valuable insights into global issues.

AI Enthusiast
Passionate about exploring the latest developments in machine learning, artificial intelligence, and data science. I am using Stable Diffusion to create AI-generated art. I have an AI art collection on **Instagram**

Recycler
I managed my company's packaging recycling project, collaborating with governmental waste recycling efforts to recycle approximately 150 kg of packaging waste annually.