Mertcan Özdemir

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About

I am a biomedical engineer with 4+ years of R&D expertise specializing in medical device innovation, embedded systems, and regulatory compliance. Experienced in securing competitive grants and developing market-ready medical technologies. Complemented by 2+ years in academia, where I mentor students and conduct research in cardiac imaging using advanced AI techniques. Bridging industry innovation with academic research to deliver impactful healthcare solutions.

Skills

Technical: C/C++, Python, MATLAB/Simulink
Languages: Turkish(Native), English(C1), German(A2)

Professional: ISO 62304 (SaMD) Compliance, Clinical Research
Frameworks: PyTorch, freeRTOS, Qt

Experience

Graduate Researcher | *TOBB University, Ankara* 2024 – Present

- Developing Diffusion Model for cardiac MRI data augmentation for improving segmentation accuracy while reducing processing time.
- Taught 3 engineering courses, mentored 30+ students, and guided five final-year projects with industry partners.

R&D Engineer | *Okuman Medikal, Ankara* 2020 – 2024

- Secured three TÜBİTAK-funded projects (10M+ TRY), delivering all within budget and timeline constraints.
  - Developed ISO 62304-compliant software for endotracheal tube pressure monitoring system with fault-tolerance.
  - Engineered dental sedation device with 30% improved precision and enhanced user interface.
  - Led team developing transport incubator achieving ±0.1°C temperature regulation for neonatal care.
- Conducted multi-site clinical validation studies, ensuring MDR compliance and regulatory approval.

Co-Op Engineering Trainee 2015 – 2016

SIEMENS Healthineers
Supported maintenance of MRI and CT systems, gaining experience with medical imaging equipment.

Gülhane Military Medical Academy
Calibrated ECGs, defibrillators, and patient monitors to international standards.

Trimed Implants
Optimized titanium implant anodization to enhance biocompatibility and surgical identification.

Education

TOBB University of Economics and Technology 2025(Expected)
PhD in Biomedical Engineering

Research focus: Developing generative AI models to accelerate cardiac MRI acquisition and interpretation while maintaining diagnostic accuracy.
***C*ourses Lectured:** Biomedical Sensors and Transducers + Lab., Biomedical Instrumentation Lab., Physics Lab.

TOBB University of Economics and Technology January 2020
M.Sc. in Biomedical Engineering

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

Patent & Scholarly Work

International Patent: Thermal Monitoring System (WO2023163682A1)
Invented and patented innovative safety technology for neonatal care that precisely monitors thermal conditions in radiant heating devices, preventing potential overheating incidents through advanced sensor integration and real-time monitoring algorithms. **View Patent**

Research Publications
Author of peer-reviewed publications in biomedical engineering focusing on medical device innovation and imaging technologies. Research contributions cited by international scholars in the field. **Google Scholar**

Hobbies & Interests

Ice Hockey
Represented Turkey on the national team. Founded and captained my university's team, leading them to the Unileague Finals for three consecutive seasons.

Traveling
Passionate about global exploration, having visited multiple countries across several continents while developing cross-cultural awareness.

Sustainability
Initiated a packaging recycling project at my company, successfully recycling over 200 kg of materials annually.

References

Prof. Dr. Osman Eroğul
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Note: Additional contact information, including phone numbers, is available upon request.