BERKE ATASEVEN

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A passionate, hands-on mechanical engineer with a keen interest in interdisciplinary engineering projects

EDUCATION

Koç University **MSc Mechanical Engineering** *Sep 2020 – March 2023*

- Area Courses: Deep Learning / Computer Vision / Biomedical Signal Processing
- Overall GPA: 3.67

Koç University **BSc Mechanical Engineering** *Sep 2015 – June 2020*

- Area Courses: Robotics / Vibration Theory / Rocket Propulsion / Machine Design
- Senior Year Project: TELE-BOT, teleoperated mobile robot with a manipulator. Was selected as the best engineering project class of 2019-2020

EXPERIENCE

Design Engineer **TUSAS Engine Industries (GE Aerospace)** *March 2023 - Present*

- TEI is the leading aviation engines brand in Turkey
- Worked as a contractor for General Electric Aerospace
- Root cause analysis of the problems occurring in the engines from the field
- Integration of new ideas into existing gas turbine engines
- Life-cycle engineering of the commercial, operational engines
- Conflict resolution with manufacturers

Co-Founder **Tedavem Bilişim ve Elektronik Sistemleri** *July 2021 – June 2023*

- Start-up funded by The Scientific and Technological Research Council of Turkey, TÜBİTAK
- Developing IOT-Based Sensor Systems for remote patient tracking in hospitals
- Responsible for mechanical design / machine learning / system integration

Research Assistant **Robotics and Mechatronics Laboratory** *September 2020 – March 2023*

- Developed a haptic interface capable of giving force and weight feedback
- Robotic simulation using Gazebo and ROS
- Implementing motion planning algorithms

R&D Engineer **Hattat Traktör** *June 2018 – August 2018*
Summer Intern

- CAD Design of a rollover protection structure for various vehicles
- Finite element analysis of specific vehicle components

PROJECTS

- A hand-held haptic device capable of giving force and stretch feedback to users in virtual environments. Designed and built the device. Evaluated the performance of the device through user studies.
  (Haptics, Control Systems, CAD, Unity, Python, C++)
- A mobile robot with a robotic manipulator capable of autonomous object tracking won the Best Engineering Project Award for the 2019 – 2020 academic year. V1 – V2
  (Computer Vision, Autonomous Driving, Hardware Design, PCB Design, Unity, C++)
- CANSAT Competition: Designed and manufactured a delta wing payload with asymmetric wings. The payload can gather atmospheric information as it descends on a spiral trajectory.
  (MATLAB, Simulink, Hardware Design, Sensor Integration)
- TUBITAK Autonomous UAV Competition: Coded and tuned the flight control system from scratch. Devised the ground control software to track and autonomously command the quadcopter.
  (Simulink, Control Systems, Autonomous Control, Java, C++)
- Developed a prototype to notify nurses in case of venous needle dislodgement of patients. Implemented machine learning techniques in a practical use-case scenario. Achieved over 89% detection rate.
  (Machine Learning, Convolutional Neural Networks, NumPy, Torch)
- A Vibrotactile Hand Interface for VR tracking won the Best Engineering Project Award for the 2018 – 2019 academic year.
  (Computer Vision, Hand-Tracking, C++, 3D printing, Hardware Design)

PUBLICATIONS

- Ataseven B., Madani A., et al. "Physical Activity Recognition using Deep Transfer Learning with Convolutional Neural Networks," IEEE CyberSciTech/PICom/DASC/CBDCom 2022
- Başdoğan C., Ataseven B., Srinivasan M. A., "Perception of Soft Objects in Virtual Environments Under Conflicting Visual and Haptic Cues", in IEEE Transactions on Haptics, DOI:10.1109/TOH.2023.3322189"

PATENTS

- **Nasogastric Tube Design with Self-Induced Momentum (TR2022/001302)**

A new nasogastric tube design aims to minimize the skill the medical staff requires for nasogastric tube insertion.

- **Flexible Acoustic Sensor Feedback System Monitoring PEG/ PEJ/Drainage Dislodgements in Patients (TR2021/015887)**

A flexible acoustic sensor system that detects and reports the PEG/ PEJ/ medical drainage dislodgments in patients.

- **A Device for Detection of Vascular Access Dislodgements and Notification of the Authorized Person (WO 2022/071910)**

A sensor system to detect and report venous dislodgments in hospital patients.