Burhan Karahasan

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EDUCATION

Koc University, College of Engineering   **Istanbul, Turkey**

    Bachelor of Science in Electrical and Electronics Engineering, Fourth year   **2020-Present**

    Bachelor of Science in Mechanical Engineering, Fourth year   **2018-Present**

    • CGPA: **3.93** out of 4.0

    • Projected graduation is in 2024.

EXPERIENCE & CAMPUS INVOLVEMENT

Koc University Manufacturing and Automation Research Center,

Undergraduate Research Assistant   **Mar. 2021-Present**

- Currently conducting research on a robotic guided surgery project, working on robotic manipulator algorithm design for path optimization in minimally invasive surgical brain operations, generating surgical paths avoiding any incisions through critical zones or brain vessels.
- Previously conducted research on a mechanical ventilation device and published a paper, worked on the serial communication of several sensors & devices, optimized the system and improved the sampling rate of sensors 20 times.

Ubicro, *Prototyping and Testing Engineer*   **Aug. 2022-Dec. 2022**

- Implemented electronic controllers on aeroponic farming machines and assembled prototypes.

DeltaV Space Technologies, *Guidance, Navigation and Control Intern*   **Aug. 2022-Sep. 2022**

- Worked on flight data storage using STM32 microcontroller devices.
- Reported several research about deep learning applications on rocket systems, hybrid altimeter systems in supersonic aircrafts and calibration & characterization of IMU sensors & noise effects.

Koc University Office of Learning and Teaching, *Tutor*   **Jan. 2021-June 2022**

- Helped students to learn MECH206: Dynamics course.
- Provided academic peer support to students, which led to improved grades.

Koc University Office of Learning and Teaching, *Tutor*   **Sep. 2021-Jan. 2022**

- Helped students to learn MECH201: Statics and Mechanics course.
- Provided academic peer support to students, which led to improved grades.

Turkish Aerospace Industries, *Integrated Logistics Support Intern*   **June. 2021-July 2021**

- Worked with the equip that conducts tests on unmanned aerial vehicle engines and prepares the repair and maintenance manuals for post-sales in integrated logistics support department.
- Coded a form application that helps to filter the maintenance manuals.

Koc University College of Science, *Teaching assistant*   **Feb. 2021-June 2021**

- Tutored students to learn MATH106: Calculus course.
- Helped students with the curriculum, answered their questions, and provided guidance on assignments and exams and improve their grades in the course.

PUBLICATIONS

Munam Arshad, Eda Guven, Burhan Karahasan, Ismail Lazoglu. "A novel real-time wireless sensor integration for enhancing positive pressure system operation in single limb passive vented circuit". *Biomedical Signal Processing and Control* 85 (2023).

- A wireless proximal sensor system was developed to improve the performance of single limb vented pressure support devices.
- Worked on the electronic circuit design, sensor communication, preparing visuals, 3d design.

TECHNICAL SKILLS

Programs:

Computer Aided Design / Computer Aided Manufacturing: Siemens NX, SolidWorks, Fusion 360

Finite Element Analysis: ANSYS Mechanics, ANSYS Fluent

Electronics Circuit Design and FPGA Programming: PSpice/LTSpice, Xilinx ISE Design Suite

Microsoft Office

Programming Languages: MATLAB, Python, Java/JavaFX, C/C++, VHDL, Visual Basic

Other: Robotic system simulation and trajectory planning via MATLAB Robotics Systems Toolbox, data processing through machine learning/deep learning, generative design via Autodesk Fusion 360

EXTRACURRICULAR PROJECTS

Koc University Autonomous Drone Team (KUADRONE), *Team Leader*   **2020-2021**

- Competed in TUBITAK's 5th international unmanned aerial vehicle competition.
- I was responsible from the team hierarchy, and the documentation of the project.
- Worked on the mission planning, thrust calculations and electronic circuit design.

LANGUAGES

English (C2), **Chinese** (intermediate)