CAN KOCABALKANLI

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EDUCATION

Johns Hopkins University

M.S.E. in Robotics
GPA: 3.92/4.00   Exp. May 2020

B.S. in Mechanical Engineering
Minor in Robotics, Mathematics
General & Departmental Honors

GPA: 3.70/4.00   May 2019

Dean's List: Fall 15, 16, 17, 18; Spring 16, 18, 19

TECHNICAL SKILLS

Software & Languages:

Pro/E, SolidWorks, MATLAB, ROS, Mathematica, Arduino, Java, Python, C++, C#, COMSOL, ANSYS,

Skills & Algorithms:

- Robot dynamics, kinematics, control, and error propagation
- Mechatronic system design and implementation, electronics
- Non-Linear Control Theory
- Hardware/software integration
- SLAM, motion planning
- Computer vision & image proc.
- Rapid prototyping & 3D printing

Languages: Turkish, English, Intermediate Spanish

RELEVANT COURSEWORK

- Algorithms for Sensor Based Robotics
- Robot Device Kinematics, Dynamics, Control
- Computer Integrated Surgery
- FFT in Computer Vision
- Non-Linear Control
- Dynamics of Spacecraft
- Electronics & Instrumentation *(Teaching Assistant)*

ENGINEERING & RESEARCH EXPERIENCE

Galen Robotics: **Baltimore, MD**
Master's Thesis   *August 2019 – Present*

- **Developed software** in MATLAB to track an endoscope and actuate a safety mechanism when it is dangerously close to the critical anatomical structures.
- **Developed computer vision software** in Python using OpenCV and ROS to detect potential danger to patient's anatomy and retract the endoscope holder.
- **Designed and prototyped an auto-retracting endoscope holder** and its circuitry using SolidWorks and rapid prototyping methods.
- **Performed engineering tests** to assess the reaction time and effectiveness of the auto-retraction system.

Mechanical Engineering Senior Design: **Baltimore, MD**
Designer for Smart Guitar   *August 2018 – May 2019*

- **Developed, tested, calibrated sensing mechanism and electronics** to measure the forces applied on a guitar for research, injury prevention, and therapy. *(Filed patent)*
- **Designed, built, and tested** Smart Fretboard system prototype and **test fixtures and methods** using SolidWorks, machine shop tools and rapid prototyping.
- ASME Johns Hopkins Mechanical Engineering 2019 **Best Senior Design Project Award**

LCSR Vaccine Automation: **Baltimore, MD**
Research Engineer   *July 2017 – March 2019*

- **Led team of 4 students to design and implement** a mechatronic processing system to prepare mosquitoes to produce malaria vaccines. (*Filed Patent)*
- **Co-Authored and presented paper** in Conference on Automation Science and Engineering (CASE) 2019.
- **Designed system components** in Pro/E and SolidWorks and rapid prototyped them.
- **Delivered, reported, and documented** weekly deliverables such as prototypes, test results, analysis to multiple cross-functional teams and stakeholders.

Robot and Protein Kinematics Lab: **Baltimore, MD**
Research Assistant   *April 2017 - July 2018*

- **Developed software in Python and C++** for an android to imitate human users **real-time** based on data from an **infrared sensor.**