Haritha Seddik

• Istanbul, Turkey • akkad.haritha@gmail.com • github.com/HarithaSeddik

I am a Mechanical Engineer with research experience who is seeking admission to a graduate school to earn a master's degree. Backed by research skills obtained from both the industry and undergraduate research, I am looking to carry out graduate studies in the fields of computational engineering, and numerical simulation.

Education

Bilkent University– Ankara, Turkey

Bachelor of Science Degree in **Mechanical Engineering** – Sept. 2016 - June 2020

• CGPA: **3.56/4.00** • Ranked **5th /120** in cohort • High Honors Graduate

Research Experience

3/18 - 5/19 Undergraduate Research Assistant - MiNi Lab, Bilkent University

- Studied droplet breakup dynamics in microfluidic junctions under supervision of Assist. Prof. E. Yegan Erdem.
- Conducted a research study to analyse the effects of geometry and parameters on the droplet diameter and the necking pressure in microfluidic channels.
- Modeled droplet formation with COMSOL's FEA using the Set method to solve for multiphase flows, used MATLAB for statistical analysis.

Work Experience

10/21 – *Present* Software Developer at Kobil GmbH -Istanbul, Turkey

- Part of the Flutter team working on 'Istanbul Senin' app for the Istanbul Metropolitan Municipality.

9/20 – 10/21 R&D Engineer at Rail-Acoustic Enekom Energy - Ankara, Turkey

- Analyzed the FFT response of accelerometer sensors in the MATLAB environment..
- Developed audio-analysis algorithms with Wavelet transforms using Matlab.
- Developed multiple full-stack Python desktop applications for reading data from sensors with serial communication, analyzing the results, and setting a standard for QC-testing before production.

7/19 – 9/19 R&D Intern at Artiboyut Technologies – Ankara, Turkey

- Designed 3D printer parts using SolidWorks, programmed printer's homing system using RaspberryPi.

Projects

Hunter Drone (Object Tracking with Python OpenCV) – Senior Year Project

- Project lead for developing a hunter drone platform that neutralizes malicious drones.
- Object-recognition with Python's OpenCV fed by a video stream powered by a Jetson NANO.
- Gimbal servo-motor control using feedback from video-stream.

Design and Development of a PID controller for Brushless DC Motors

- Modeled DC motor dynamics, designed and simulated a PID controller using Matlab-Simulink.
- Using feedback from an encoder, implemented the PID speed controller using Arduino

2D Finite Element Method based Model & GUI

- Developed a FEM based algorithm for modeling, processing, & post-processing 2D mechanical & thermal stresses/strains using Matlab. Built a GUI using Matlab to simulate different test-cases.

Modeling Mobility Interactions in Population Biodiversity

- Recreated Nature paper (Reichenbach, et. al 2007) that models the effect of mobility on biodiversity based on the stochastic rock-paper-scissors game model (Mathematical Evolutionary Game Theory model).

Gap-Closing Mechatronics Robot (ME-384 Competition 2nd Place)

- Programmed a PIC microcontroller in C for DC motors PWM control using ultrasonic sensors.

Fracture Mechanics Numerical Model & Lab Machine Apparat

- Developed a Matlab code to calculate & compare the theoretical & experimental fracture toughness.

Skills & Abilities

• Matlab/Simulink	• Python	• ANSYS	• SolidWorks	• Fast Learner
• COMSOL	• CFD	• PID Design	• Git	• Experienced Presenter
• Arduino/Microcontrollers	• FEA	• TensorFlow	• C	• Team leader

Grants

- 100% Comprehensive merit-based Scholarship to pursue Bachelor's Degree, Department of Mechanical Engineering, Bilkent University.

Spoken Languages

• English - *Native* • Turkish - *Fluent* • Arabic - *Fluent*

References

• **Yegan Erdem, Assistant Professor**	Department of Mechanical Engineering, Bilkent University	yeganerdem@bilkent.edu.tr
• **Ilker Temizer, Professor**	Department of Mechanical Engineering, Bilkent University	temizer@bilkent.edu.tr