Eray Baykal

https://www.linkedin.com/in/eray-baykal-9a37a2196/

New York, NY 10027 • eb3427@columbia.edu • +1 203 275 57 80

Engineering Portfolio: https://erybykl.wixsite.com/eray-baykal

EDUCATION

COLUMBIA UNIVERSITY, SCHOOL OF ENGINEERING AND APPLIED SCIENCES   **New York, NY**

Bachelor of Science in Mechanical Engineering   *May, 2025*

- Current GPA: 3.6 / 4.0
- Relevant Coursework: Materials, Dynamics and Vibrations, Heat Transfer, Thermodynamics, Fluid Mechanics, Mechanics of Solids, Foundations of Data Science, Automotive Dynamics, Linear Algebra, Data Structures in Java, Ordinary Differential Equations, Intro to Electrical Engineering, "MATLAB Master Class: Beginner to Expert"

SKILLS

Design and Manufacturing: High Vacuum Chambers, Cryogenics, High Strength Magnets, SolidWorks, Fusion360, Blender, Machining (lathe, mill, CNC, laser cutter), 3D Printing
Computer: Java, Python, MATLAB Data Processing, Excel, Arduino, Raspberry Pi
Language: Turkish (native), English (fluent)

PROFESSIONAL EXPERIENCE

COLUMBIA UNIVERSITY PLASMA LAB   **New York, NY**
Researcher on Pellet Ablation Experiment   *August 2023 - Present*

- Researching ablation properties of cryogenic gas mixtures towards improving disruption mitigation in plasma
- Received $100.000 from the U.S. Department of Energy to conduct experiment to improve fusion confinement by means of pellet injection
- Collaborating with Oak Ridge National Laboratories as an undergraduate only team from Columbia University

COLUMBIA UNIVERSITY MECHANICAL ENGINEERING LAB   **New York, NY**
Machine Shop Super-User   *May 2022 - Present*

- Trained on how to conduct heavy machining tools such as mills, lathes, CNC machines and laser cutters
- Certified to guide and instruct other students with their use of heavy machinery
- Maintaining machinery and the laboratory space

COLUMBIA UNIVERSITY FSAE TEAM   **New York, NY**
Suspension System Co-Lead   *Jan 2023 - Nov 2023*

- Designing and building a new electric Formula race car after sponsorship from Tesla
- Leading the design, manufacture and testing of the suspension systems for the new vehicle
- Implemented MatLab script to process tire data as first in the team

Dynamics and Suspension Team Member   *May 2022 - Jan 2023*

- Optimized and manufactured the rockers for the suspension system
- Worked with design and simulation programs such as SolidWorks and Ansys to inform topological optimization

COLUMBIA UNIVERSITY ROAM LAB   **New York, NY**
Research Assistant on Robot Snake Project   *Oct 2022 - May 2023*

- Improved a snake robot that explores innovative series elastic actuator (SEA) technologies
- Optimized mechanical design aspects to acquire efficient energy transformation from actuator to thrust as well as to allow for accurate data collection from the sensors
- Investigated mathematical models to better inform the propulsion and surface friction properties of the snake

ADDITIONAL

- IMPERIAL COLLEGE 61ST LIYSF: LONDON INTERNATIONAL YOUTH SCIENCE FORUM: **Attendee**