Renato Korzinek

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BOSTON UNIVERSITY, B.S. Mechanical Engineering w/Aerospace Concentration 2025

Courses: Thermodynamics, Electric Circuits, Fluid Mechanics, Dynamics, Mechanics of Materials, Heat Transfer, Dynamics of Space Vehicles, Compressible Flow, Aircraft Design, Quantum Physics

Professional Experience

JOBY AVIATION, Santa Cruz, CA

Rotor Dynamics Intern Summer 2024 – Fall 2024

- Responsible for aiding in dynamic blade loads validation for propellor blades on various Joby Aviation eVTOL aircraft using MATLAB, Python, RCAS, and proprietary codes
- Developed an automated post processing and data analysis tool for wind tunnel tests and proprietary calculation codes in interpreting loads and dynamic blade data for the flight physics department
- Performed GVT (ground vibration test) and SMI (structural mode interaction) on Joby S4 aircraft

UNSTEADY FLUID MECHANICS AND ACOUSTICS LABORATORY, Boston, MA

Research Team Intern Summer 2023 – Spring 2025

- Assigned with interpreting, calculating, and visualizing data obtained from Raytheon Technologies Research Center (RTRC) and NASA targeting turbulent wake flow from rotor fan blades
- Streamlined code in reducing broadband noise from turbofan engines for a quieter and cleaner future for the FAA Ascent Program and with Raytheon Technologies Research Center (RTRC)
- Influenced NASA ULI project changing modern unmanned aircraft systems to navigate turbulent airflows in urban environments and reduce noise pollution
- Programmed cfd with Linux, XROTOR, CHARM, and OpenFOAM analyzing multirotor noise data

SEASIDE SUSTAINABILITY, Gloucester, MA

Sustainability Intern Winter 2019 - Spring 2021

- Launched coastal plastic mitigation project to forecast the need for updated plastic regulations
- Successfully built a long range, high-efficiency drone to compete with industry standards and survey salt marshes for fishing pollution and collect data to present to city officials and fisherman

Selected Projects

Linear Potentiometer System for Measurement of a Weakly Nonlinear Oscillator Spring 2025

- Analyzed 2nd Order System in scotch yoke mechanism with unknown spring and oscillating mass
- Applied sinusoidal and step inputs to determine driving frequencies and dampening ratios to compare with theory

Hydrogen Production from Solar Energy Fall 2024 - Spring 2025

- Engineered PEM electrolysis cell in senior team project in attempt to reach $2/kg Hydrogen goal
- Manufactured working PEM cell from original design that produced Hydrogen from DI water at over 10ml/min
- Outperformed purchased prototype cell in terms of energy consumption for Hydrogen generation

Widebody Airliner Design Project Fall 2024

- Designed widebody airliner computationally to compete with top modern designs Boeing 777 and Airbus A350

Arm-a-get-it Low Mobility and Precision Tool Aid Spring 2024

- Devised and led a team project which automated functionality for various tooling processes
- Allowed low-mobility users to precisely apply tools for applications such as soldering or printing

ADHD Accessible Desk Lamp Project Fall 2022

- Led a desk lamp design and manufacturing project focusing on implementing researched blue-light sensors and gross motor skill functions for customers with limited dexterity and ADHD

Qualifications

Skills: Solidworks, MATLAB, C, Python, Linux, XROTOR, OpenFOAM, RCAS, GVT, Git, HTML

Shop: hand tools, power tools, drill press, CNC machines, soldering, 3D printing, laser cutting, water jetting

Awards

Boston University Dean's List Spring 2023 – Spring 2025

Boston University University Scholarship Spring 2020

Extracurriculars

BOSTON UNIVERSITY SAILING TEAM, Boston, MA Fall 2021- Spring 2025

- Competed throughout New England and Florida in NEISA level A,B, and C events

NASA ULI Workshop, Virginia Tech, VA Spring 2024

Interests: Studying Abroad, Traveling, Drums, Bass, New Cuisine, Skiing, Mtn. Biking, Surfing

Language Proficiency: Fluent in English and Czech