# ILIA KHEIRKHAH
524 Oak Ave, Linwood, NJ 08221
609-385-3313 ▪iliak@seas.upenn.edu

## EDUCATION:

University of Pennsylvania, Philadelphia, PA
BSE in Mechanical Engineering (Expected Graduation Spring 2024)                    GPA – 3.72
MSE in Mechanical Engineering (Expected Graduation Fall 2024)                      GPA – 4.00

## Experience:

*Naval Surface Warfare Center Philadelphia – Engineering Intern*              June 2023 – August 2023
▪   Reduced Testing time by up to 30% by developing a model for predicting flow rate between two closed tanks accurate to 99% of predicted values.
▪   Designed and presented a poster about flow model that won Second Best Project Presentation out of ~30 other posters.
▪   Set up, executed, and processed Acoustic Flow Testing for various different shipboard parts.
▪   Helped Calibrate and organize ~100 Accelerometers, Hydrophones, and other Miscellaneous sensors.

*M51 Space – Mechanical Team Lead*                                            November 2021 - Present
▪   Designed and tested a function hybrid engine during the Summer of 2022.
▪   Created a critical design review (CDR) presentation to present to and get feedback from professionals from different industries.
▪   Using ANSYS FEA and CFD to verify designs and improve various parameters
▪   Plan to design and test a 25k ft Solid Engine rocket made to compete with the Friends of Amateur Rocketry in June '23
▪   Used Solidworks to create CAD Models and engineering drawings for various parts which were then machined in house.

*Penn Aerospace Club – Balloon Team Mechanical Lead*                          Fall 2020 - Present
▪   Designing and testing High Altitude Balloons.
▪   Launching High Altitude Balloons throughout the semester to collect various forms of data using Arduinos.
▪   Analyzing received data to improve our systems and conduct various experiments.

*Undergraduate Research Assistant*                                            November 2021 – Present
▪   Used ANSYS and OpenFOAM to model fluid flow through kirigami fog collectors with Professor Arratia of the Complex Fluids Lab at the University of Pennsylvania
▪   Work with Graduate students to analyze simulation data and measure effectiveness of geometries

## Projects:

*Transient Lid Driven Cavity Flow Simulation*
▪   Derived and implemented a Transient Lid Driven Cavity Flow Simulation in MATLAB
▪   Used Finite Volume Method (FVM) and SIMPLE algorithm for discretization and pressure-velocity coupling
▪   Evaluated at various Reynolds Numbers, documenting solve time and convergence rates.

*Numeric Lifting Line Wing Analyzer*
▪   Applied Numeric Lifting Line techniques to predict Lift and Drag properties of any wing

*Sterling Engine*
▪   Designed and created engineering drawings for a Sterling Heat Engine
▪   Manufactured and tested the engine; operating speed of 1000 RPM

## Other:

Secret Security Clearance