IOAN ASSENOV

ioancho@umich.edu • +1 (734) 800-1908 • linkedin.com/in/ioan-assenov

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EDUCATION

UNIVERSITY OF MICHIGAN   Ann Arbor, MI
Bachelor of Science in Mechanical Engineering, August 2022 - December 2025
- GPA: 3.96/4.00 — Recognitions: Dean's List & University Honors (6 consecutive semesters), 2022 William J. Branstrom Freshman Prize, James B. Angell Scholar
- Relevant courses: Design & Manufacturing, Dynamics, Controls, Vibrations, Solid Mechanics, Mechanical Behavior of Materials, Fluid Dynamics I, Thermodynamics I

EXPERIENCE
Summer 2025

UNIVERSITY OF MICHIGAN   Ann Arbor, MI
Research Assistant - Vibrations and Acoustics Laboratory: Microsystems (PI: Dr. Kenn Oldham)
- Developed calibration testbed for endomicroscopic laser devices using 2-axis motorized piezoelectric stage fixtures with bespoke parametrized raster scanning script in MATLAB, enabling further development of closed-loop piezo MEMS scanning mirrors for endoscopes
- Programmed custom real time data acquisition and image reconstruction system algorithm in MATLAB with data validation, correction, and downsampling capability, generating high fidelity optical target images for resolution testing and future imaging experiments

Fall 2025

Teaching Assistant - MechEng 360: Modeling, Analysis, and Control of Dynamic Systems
- Hosted semiweekly office hours to support course operations covering essential mechanical engineering concepts including differential equations, dynamic system modeling, and technical intuition in vibrations and mechanics guiding over 170 students in content mastery
- Provided individualized constructive feedback and mentorship on key concepts to students depending on current comprehension, contributing to improved academic performance
- Collaborated closely with faculty to develop and refine course content, homework, and examination materials, ensuring clarity, accuracy, and alignment with learning objectives.

Summer 2024

DRONAMICS   Sofia, Bulgaria
Structural Engineering Intern
- Devised design for new main landing gear (MLG) to be made of carbon fiber composite through static analysis, resulting in 60% weight reduction per landing gear from current design
- Conducted 4 multi-DOF dynamic analyses on aircraft MLG and determined suspension stiffness/damping parameters, ensuring safe system response during hard landing in Simulink
- Evaluated dynamics of two proposed parachute system drop tests to define test configuration parameters for 1300kg aircraft, advancing flight termination system certification progress

2022-2025

MICHIGAN AERONAUTICAL SCIENCE ASSOCIATION   Ann Arbor, MI
Systems Engineering Director
- Consolidated team resources across 3 collaborative platforms, coordinating 7 rocket subsystems to meet vehicle requirements and maintain 8-month engine development timeline
- Developed and promoted sustainable documentation practices and standards to ensure critical knowledge across 75+ projects remains within team as members advance into industry

Limelight Rocket Engine Nozzle Technical Project Lead
- Designed converging/diverging rocket nozzle featuring graphite throat, ablative extension, and complex internal profile for use in 12.5 kN kerolox rocket engine with 30 km altitude target
- Analyzed structural load cases for component by hand using published research and materials information to iteratively improve geometry; results confirmed with over 20 FEA simulations in Ansys software to verify nozzle survives 25 second full thrust burn within safety factor of 2
- Drafted drawings with manufacturing plans following GD&T standards for 4 sub-components for third-party manufacturers and in-house manufacturing purposes ensuring $2900 nozzle & backup parts are manufactured within 4 months for 2+ full length hot fire tests in May 2024

Clementine Rocket Testing & Launch Crew
- Facilitated assembly of the most powerful fully student-built kerolox rocket (5 kN) flown, in expeditious environment with 23 peer crew and successfully launched to 2.3 km in May 2023
- Operated ground support equipment in active tank pressure control systems and rocket motor plumbing tests during 12-week prelaunch campaign, verifying functionality of 5+ subsystems

ADDITIONAL
- Software: Siemens NX, Onshape, SOLIDWORKS, Ansys, Adobe Suite, Docker
- Programming languages: Python, MATLAB/Simulink, C++, HTML/CSS, JavaScript
- Skills: Manual mill & lathe, GD&T, 3D printing, graphic design, *nix, containerization