

Aleksandr Mnatsakanyan

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SUMMARY

Mechanical Engineering student with hands-on experience in aerodynamics, computational fluid dynamics (CFD) analysis, finite element analysis (FEA), and mechanical design. Proficient in industry-standard software including SolidWorks, ANSYS Mechanical, STAR-CCM+, ABAQUS, and MATLAB. Proven ability to enhance design performance, reduce material usage, and improve product lifespan through innovative mechanical design and analysis.

EDUCATION

Bachelor of Mechanical Engineering, Honors Track

University of Florida, Gainesville, FL

Expected Graduation: May 2026

GPA: 3.75 / 4.0

Related coursework:

- Finite Element Analysis and Design EML4507.
- Numerical Methods of Engineering Analysis EGM3344.
- Heat Transfer EML4140.
- Control of Dynamic Systems EML4312.

International Baccalaureate Diploma

United World Colleges, Dilijan, Armenia

2020 - 2022

GPA: 39 / 45

WORK EXPERIENCE

Mechanical Design Engineer

Sep 2024 - Present

UF Department of Neurosurgery, Gainesville, Florida

- Designed a high fidelity spine implant using SolidWorks and did stress analysis using ANSYS, improving ease of use, manufacturability time by 11% and projected product lifespan.
- Enhanced implant durability, resulting in an increase in performance stability over previous designs.

Mechanical Design Engineering Intern

May 2024 - Aug 2024

Davaro Defense Systems, Yerevan, Armenia

- Conducted computational fluid dynamics (CFD) and finite element (FE) analysis on UAV prototypes, enhancing vehicle dynamic stability by 9% during initial flight tests.
- Introduced a new combustion analysis method using FLOW-3D, reducing analysis time by 25% and dramatically improving accuracy.
- Improved UAV model manufacturability, reducing production time by 12% and saving 8% on material costs.

Aerodynamics System Engineer

Aug 2022 - Sep 2024

Formula SAE Team, University of Florida, Gainesville, USA

- Introduced an innovative curved wing design, achieving a 14% reduction in weight and an 8% increase in aerodynamic efficiency, improving the car's lap time by an estimated 5%.
- Performed over 300 CFD design manager analysis on rear wing elements with STAR-CCM+, optimizing airflow and increasing downforce by 10%.
- Led fabrication of over 20 carbon-fiber composite components, reducing material waste by 15% through optimized cutting and layering techniques.

ADDITIONAL INFORMATION

- **Technical Skills:** Stress Analysis, Airflow Analysis, CAD, Manufacturing, Prototype Development
- **Soft Skills:** Project Management, Critical Thinking, Prioritization and Organization, Effective Communication
- **Languages:** English, Russian, Armenian
- **Awards and Honors:** Dean's List: Fall 2022, Spring 2023, Fall 2023, Spring 2024