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 — Expected Graduation: May 2026
University of Florida, Gainesville, FL — GPA: 3.75 / 4.0
Related coursework:

- Finite Element Analysis and Design EML4507.
- Numerical Methods of Engineering Analysis EGM3344.
- Design and Manufacturing Laboratory EML2322L.

International Baccalaureate Diploma — 2020 - 2022
United World Colleges, Dilijan, Armenia — 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