Andrei Veliche

andrei.veliche@mail.polimi.it • +39 344 628 7439 • www.linkedin.com/in/andrei-veliche

EDUCATION

Politecnico di Milano, Milano, IT — **September 2025 – Present**
Candidate for Laurea Magistrale in Automation and Control Engineering

Northeastern University, Boston, MA — **September 2020 – May 2024**
Bachelor of Science in Mechanical Engineering and Physics, Minor in Mathematics. *[GPA: 3.96/4.0]*
Activities: Putnam Math Club, AeroNU, SAE Electric Racing

PROFESSIONAL EXPERIENCE

Adapta Robotics, Bucharest, Romania — **November 2024 - September 2025**
Robotics Systems Engineer

- Patented a scalable, universal fixture for smartphones in a robotic multi-functionality testing setup, multiplying process throughput by 500%.
- Designed custom extruded aluminum profiles to halve the production costs of MATT delta robots.
- Provided hardware R&D support to a wide customer base in the tech industries worldwide.

Fulfil Solutions, Mountain View, CA — **July 2023 - December 2023**
Mechanical Systems Engineer

- Optimized robotic bag-packing algorithms via physics-based modeling to prevent SKU damages.
- Instructed a software team to integrate an OpenCV algorithm into production code, enabling a 5x improvement in drop-targeting accuracy.
- Calibrated, bench-marked, and assembled multi-axis automation machinery to meet design specs.

Mesodyne, Somerville, MA — **June 2022 - December 2022**
Nanophotonics R&D Engineer

- Characterized vacuum-packaged thermal systems using custom thermocouples, thermistors, and thermal cameras to improve power generation efficiency.
- Designed an actively cooled radiative emission calorimeter accurate to within 5 Watts, using SLS and 5-axis milling, validated through MATLAB modeling and chi-squared analysis.
- Crafted embedded data acquisition circuit boards using STM32 and nRF52 ecosystems.

PROJECTS & EXTRACURRICULAR

Flight Simulator Chair (Senior Capstone Project) — **May 2023 - May 2024**

- Constructed a 200-kg capacity flight simulator chair capable of ±25° pitch and roll maneuvers.
- Wrote parametric static force solvers in Python to optimize gimbal geometry and reduce overall costs.

Self-balancing Inverted Pendulum — **August 2018 - September 2020**

- Low-cost implementation of a balancing inverted pendulum to test feedback control concepts.
- Designed 3D-printed compliant mechanisms and used FEA to mitigate manufacturing defects.

FIRST Tech Challenge Mentor — **September 2020 – May 2023**

- Coached high school students in the deterministic design process to build a 20 kg competition robot

SKILLS

Software & Programming: SolidWorks, PDM, OnShape, Fusion 360, Ansys, NVIDIA Isaac Sim, Simulink, LaTeX, MuJoCo, PyBullet, PyDrake, KiCAD, EASII, STM32CubeIDE, Python, C, C++, C#, SQL, Java, MATLAB, Maple

Languages: English (native), Romanian (native), Italian (basic)