# Mahdy Muratov

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## EDUCATION

**Stevens Institute of Technology** Hoboken, NJ
*Bachelor of Engineering, Mechanical Engineering* | GPA: 3.94 Expected May 2028
**Honors:** Pinnacle Scholar Honors Program; Presidential & Edwin A. Stevens Scholarship, 2x Dean's List
**Relevant Coursework:** Engineering Design I – III, Design of Dynamical Systems, Circuits & Systems, ME Thermodynamics

## SKILLS

**CAD/Prototyping:** SolidWorks, Figma, Design for Manufacturing, Rapid Prototyping, Arduino microcontrollers
**Fabrication:** Soldering, Knee mill, CNC waterjet, FDM 3D printing, Chop Saw, Belt Sander, Disk Sander
**Modeling/Analysis:** MATLAB/Simulink, Python, C++, ML tools, Microsoft Office
**Spoken Languages:** Russian, English (Fluent); Mandarin (~HSK3)

## PROFESSIONAL EXPERIENCE

**Engineering Department at Stevens Institute of Technology** Hoboken, NJ
*Teaching Assistant – Circuits and Systems* September 2025 – Present
- Evaluate student assignments and provide targeted feedback to improve understanding of system design and analysis, reinforcing engineering methodologies and contributing to the academic success of a 450+ student engineering course.

**Advanced Quantum Materials Lab at Stevens Institute of Technology** Hoboken, NJ
*Undergraduate Researcher in Memristor-based Spiking Neural Networks (SNNs)* April 2025 – August 2025
- Engineered and implemented a simulated memristor-based SNN using NumPy, PyTorch, and Brian2 frameworks.
- Developed a full data-to-classification pipeline: encoding image inputs into spike trains, simulating memristor crossbar arrays, and decoding spike-time outputs, then on digit classification, achieving 92.63% test accuracy after training.
- Built visualizations such as heatmaps and confusion matrices to analyze performance and interpret neural dynamics.
- Collaborated with peers PhD mentors, contributing to neuromorphic computing research; set to present findings at Stevens Symposium for Undergraduate Research.

**Vektan Chemical** Tashkent, Uzbekistan
*Lab Technician* June 2023 – August 2023
- Ran synthetic wax raw materials testing in the production lab of a 200-employee polyethylene wax manufacturer, ensuring compliance against design standards with required melting points, hardness, and other critical criteria.
- Led three assistants in conducting testing procedures, enhancing coordination and improving overall lab efficiency.
- Restructured training materials for new employees, reducing onboarding time by over 50%.

**Henkel AG & Co. KGaA** Amsterdam, The Netherlands
*Supply Chain Intern* May 2022 – June 2022
- Examined product quality assurance and supply chain workflows; co-developed and presented two recruitment strategies.

## PROJECTS

**Autonomous Racing Airboat** January – May 2025
- Using SolidWorks, led hull CAD process and performed static analysis to optimize for stability and meet design goals.
- 3D-printed the optimized hull design and engineered modular components to secure a 230g electronics and motor payload.
- Designed and implemented mounting jigs for the dual-fan drive system, optimizing thrust vectoring for maneuverability.
- Integrated MH-ET control board, IMU sensor, motor controller with an Arduino, enabling fully autonomous navigation.

**ASME Mechanical Engineering Design Competition** April 2025
- Directed team of four in designing and prototyping a high-strength truss structure under materials and time constraints.
- Optimized for load capacity and vertical size, achieving top load bearing performance and second tallest structure.

**Custom Keyboard Business** November 2021 – March 2024
- Designed and built custom mechanical keyboards tailored to individual client needs, implementing advanced modifications and premium components to ensure top-notch performance and end-user experience.
- Delivered 10+ fully customized units by managing full product lifecycle, from prototyping to supply chain logistics, quality assurance, and client communications to maintain operational efficiency.

**Mechanical Engineering at Taipei American School** August 2022 – January 2023
- Designed and optimized mechanical systems for a motorized go-kart, integrating CAD-created components with iterative fabrication and testing to enhance vehicle performance.
- Engineered mechanical components and fine-tuned vehicle dynamics to achieve the fastest time trial records among all past and concurrent karts.

Available to work January to August 2026