Shadi Shahat

Rutgers Engineering Honors College

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EDUCATION

Rutgers University – New Brunswick, NJ

B.S. Mechanical Engineering | Aerospace Concentration | Expected Graduation May 2027 | GPA: 3.94/4.00

INTERNSHIPS

Gen Auto AI – Robotics Engineer | Piscataway, NJ **Sept 2025 – Present**

• Design and prototype electromechanical systems such as steering actuation and gas/braking mechanisms for autonomous stunt driving, managing the full product lifecycle from 3D modeling to on-vehicle testing.
• Troubleshoot mechatronic subsystems including CAN bus networks, IMUs, smart motors, and RF transceivers; develop control interfaces, implement, and tune PID loops for precise, reliable performance.

Allied Engineering Associates – Intern | New Milford, NJ **Jun 2025 – Aug 2025**

• Developed an AutoCAD-based database containing 300+ project details for steel, wood, precast, concrete, and cold storage systems, drawing numerous details from scratch based on engineering references.

Bergen Makerspace – Intern | Hackensack, NJ **Sep 2023 – Aug 2024**

• Built a competitive ping pong ball launcher using Fusion 360 CAD & CAM, Arduino, CNC routing, and 3D printing, and presented it to a 15+ member panel at Montclair State University during a state-wide event.
• Fabricated an electric guitar, launching a new Makerspace woodworking course with 20+ students enrolled.
• Taught drone mechanics and flight principles to 15+ students at Makerspace summer camp.

LEADERSHIP & PROJECTS

Rutgers Formula Racing (FSAE) – Powertrain and Vehicle Dynamics Engineer **Sep 2024 – Present**

• Create a dedicated dynamometer test stand for off-vehicle drivetrain design validation, utilizing an Emrax 208 to back drive an AC motor, implement injection braking, and generate torque versus RPM performance graphs to help the team transition better from internal combustion engine to electric.
• Attended weekly Rutgers Formula Racing meetings, learning directly from team leads and actively contributing to engineering design decisions, vehicle assembly, and manufacturing to support vehicle development.

Combat Robotics **July 2025 – Present**

• Engineer a full 3-lb combat robot end-to-end, modeling 20+ custom SolidWorks parts and iterating the chassis 25–30 times to optimize stiffness, weight balance, DFA and DFM, and generating CAM in Fusion 360.
• Build every component in-house, CNC-machine UHMW uprights, manual-mill aluminum motor mounts, water-jett carbon fiber armor plates, cast vytaflex rubber wheels, and 3D-print TPU/PA-6 GF components, dialing in GD&T with 30+ prototypes for proper fits and designing jigs for consistent production.
• Design and tune a belt-driven beater weapon, using SolidWorks data and custom RPM/tip-speed/current draw calculations to select gearing; fixed an ESC over-current issue by redesigning the pulley system.
• Integrate the full electrical system, soldering all connections, adding a high-current power switch, creating the wiring schematic, and configuring FS-i6X elevon mixing for smooth two-wheel differential control.

St Moses & Anba Abraam Coptic Orthodox Church **Sep 2024 – Present**

• Teach Coptic rites, hymns, and language to 15+ high school students for an hour weekly.

SKILLS

Software: SolidWorks, Fusion 360, Onshape, AutoCAD, MATLAB
Engineering Tools: 3D Printing, CNC Milling (Fusion 360 CAM), Soldering, Arduino, Woodworking
Languages: English, Arabic (Full Fluency)