Domenic Landriscina

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EDUCATION

University of Maryland, College Park | B.S. Mechanical Engineering | GPA: 3.61 Expected May 2029

SKILLS

CAD & Analysis: SolidWorks, Revit, AutoCAD, Autodesk Inventor, Fusion 360
PCB & Electronics: Altium Designer, power distribution design, I2C and serial device integration
Sensors & Instrumentation: Ultrasonic range finding, motor encoders, limit switches, servo position feedback
Fabrication & Prototyping: FDM 3D printing, manual lathe machining, soldering, breadboard prototyping, enclosure and mounting design
Team File management: Kenesto (with SolidWorks), Autodesk Forma (with Revit)
Programming: C++, MATLAB, Python

EXPERIENCE

Legacy Engineering | Mechanical Engineering Intern Catonsville, MD | July 2026 – August 2026

- Learned Revit on the job and used it to model existing conditions from field surveys, tag building plans, create riser diagrams, and draft new work for the mechanical team.
- Used AutoCAD to convert old equipment legends over to Revit for CD submissions.
- Shadowed the field team across 3 active hospital construction sites, learning how condition surveys are conducted and how punch lists are assembled from them.
- Saw how the mechanical team coordinated with architects and subcontractors across design iterations, gaining a working understanding of hospital MEP systems and the construction pipeline.

Terps Racing Baja SAE | Powertrain Subteam Member College Park, MD | August 2025 – Present

- Designed two front upright options in SolidWorks for a 4WD-to-2WD drivetrain conversion, evaluated 2,000–3,000 N load cases with FEA, and selected the final design using a weighted decision matrix.
- Revised part geometry through repeated CAD iterations and topology studies, resolving stress concentrations at bearing transitions and weld joints across 8 load cases.
- Worked with chassis, suspension, and powertrain subteams to evaluate removing the 4WD belt-drive system, a change projected to cut roughly 24 lbs and lower the vehicle's center of gravity.
- Trained in manual lathe operation, applying manufacturability constraints directly to part design.

TECHNICAL PROJECTS

Quadruped Walking Robot | Personal Project June 2026 – August 2026

- Built a four-legged walking robot from scratch: modeled and 3D printed the frame and leg linkages, prototyped the electronics on a breadboard, then designed a custom PCB in Altium Designer to pair an Arduino Nano with a PCA9685 servo driver.
- Controlled eight servos through a PCA9685 driver and integrated two OLED displays and a gyroscope on a shared I2C bus through the custom PCB.
- Iterated the printed frame across multiple revisions, leaving mounting points and clearance for future sensor and hardware additions.
- Designed a PCB-mounted switch to isolate the Arduino from battery power during calibration, enabling a safe computer connection to read servo data, troubleshoot motion, and refine walking animations.

ENES100 Autonomous Robot | Electronics Lead January 2026 – May 2026

- Led electronics for an autonomous water-sampling robot, designing and wiring the full power distribution system across dual H-bridges, a buck converter, and three independently controlled motors.
- Integrated and programmed ultrasonic depth sensing, photoresistor-based pollution detection, and a limit-switch-controlled rack-and-pinion water sampler on an Arduino Mega.
- Resolved subsystem power issues by moving low-voltage sensors to a stepped-down H-bridge supply rail when the Arduino could not provide enough current.

Motorized Blind System | PLTW Senior Capstone May 2025

- Built a prototype automated blind that opens on a schedule to wake users with natural light, integrating mechanical, electrical, and software subsystems.
- Programmed an Arduino to read motor encoder values for precise travel distance.
- Designed a 3D printed housing with Autodesk Inventor, to contain the battery, Arduino and motor compactly next to the blinds.