Ethan Matlack

Robotics engineer & master electrician

Chattanooga, TN ethan@matlackfamily.net linkedin.com/in/ethan-matlack github.com/Ethan-Matlack
ethanmatlack.com

SUMMARY

Robotics engineer and licensed master electrician with 6 years of hands-on electrical work running an independent contracting business. Strong troubleshooter across electrical, mechanical, and software systems, with project experience in motion control, machine vision, and embedded programming. Seeking a controls or automation engineering role where hands-on field skills and an engineering background both add value.

- B.S. Robotics Engineering from Widener University
- PA Master Electrician; TN Limited Licensed Electrician
- 6+ years running a licensed electrical contracting business

EXPERIENCE

Owner & Master Electrician, Matlack Electric — MAR 2020 – PRESENT · PA → TN

- Built and run a licensed, insured electrical contracting business; 500+ invoiced jobs across service calls, small installs, and large remodel and addition projects.
- Performed diagnostics and maintenance on production equipment at a commercial printing facility, replacing a DC speed controller on a shrink-wrap machine, a 480V transformer on an automated paper cutter, and a pneumatic pump.
- Diagnose and repair electrical faults on residential and commercial service calls, often on systems with no documentation.
- Install and start up standby generators and automatic transfer switches (Generac certified) and EV charging equipment (Tesla certified).
- Design and program lighting control systems for custom homes (Lutron Preferred Pro with RadioRA certification).
- Manage projects end to end: estimating, material ordering, scheduling, code compliance, inspections, and customer communication.

EDUCATION

B.S. Robotics Engineering, Widener University — AUG 2018 - AUG 2023

- Relevant coursework: PLC programming (Allen-Bradley CCW), UR5e cobot programming, robot kinematics (PUMA 560 simulation), three-phase power systems, feedback control systems.
- Co-founder and President, Widener Robotics Club. Received the School of Engineering Ambassador Award for organizing a large robotics tournament as a freshman.

LICENSES

Master Electrician — OCT 2023
Pennsylvania, multiple municipalities

Limited Licensed Electrician — AUG 2026
Tennessee — EXPIRES AUG 2028

Home Improvement Contractor — MAY 2025
Pennsylvania — EXPIRES MAY 2027

CERTIFICATIONS

Electrical & Controls

211 - Pennsylvania (Philadelphia) Standard Master Electrician Exam — OCT 2023
International Code Council

Tesla Certified Installer
Tesla

Preferred Pro
Lutron Electronics

LP 831 - RadioRA 3 Qualification Training — MAY 2025
Lutron Electronics

Air-Cooled HSB Installation Training — JAN 2024
Generac — EXPIRED JAN 2026

Safety

NFPA 70E (2021) — SEP 2023
360training

OSHA 10 Hour — OCT 2023
360training

Emergency Services

Fire Fighter I — AUG 2018
Bucks County Community College

Hazardous Materials Operations — NOV 2017
Pennsylvania Office of the State Fire Commissioner

Hazardous Materials Awareness — OCT 2017
Pennsylvania Office of the State Fire Commissioner

NIMS 100b, 200b, 700a & 800b — OCT 2017
FEMA

Other

TRUST Certificate — APR 2023
Federal Aviation Administration

SKILLS

Controls & Automation	Motion control, Machine vision, Embedded programming, PLC programming, Ladder logic, Stepper & servo motors, PID tuning, Sensors & instrumentation, Motor control circuits, Electrical schematics, Equipment troubleshooting
Electrical	Service upgrades, Generators, EV charging, Lighting control, Automatic transfer switches, Transformers, Lutron programming, Low-voltage wiring, NEC code compliance, Fault diagnosis, Permits & inspections
Software & Tools	Python, C/C++, Git/GitHub, MATLAB, Autodesk Fusion 360, Autodesk Inventor, Arduino, Raspberry Pi, OpenCV, ArduPilot & MAVLink, ROS & Gazebo, Linux, Docker, Networking, Web development
Fabrication	3D printing, Laser cutting, Stick welding, Soldering, Rapid prototyping, Mechanical assembly
Business	Project management, Estimating & bidding, Scheduling, Customer communication