

Bradley Schalk

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US Citizen | Eligible for US Security Clearance | Willing to Relocate

EDUCATION

University of Illinois Urbana-Champaign

Expected May 2029

B.S. Aerospace Engineering, Minor in Business

SKILLS & TECHNICAL TOOLS

CAD & Design: Siemens NX, Fusion 360, mechanical design, assemblies, reverse engineering

Manufacturing: Fusion CAM, CNC machining, milling, workholding, design for manufacturing, 3D printing

Robotics & Automation: FANUC RoboGuide, teach pendant (TP) programming, PLC ladder logic, I/O, sensors, industrial automation

Programming: Python, Java, Microsoft Excel

Other: Mechanical troubleshooting, forklift certified, German (professional proficiency)

EXPERIENCE

Metamora Industries — Engineering Intern

May 2026 – Aug 2026

- Programmed and integrated a FANUC R-1000iA/100F six-axis robot with a Yama Seiki BM-1600MAX VMC to automate pick-and-place of parts across four product variants, using RoboGuide simulation and teach pendant programming to set pickup, approach, machine load/unload, and rack positions.
- Wrote PLC ladder logic to coordinate robot-to-machine communication and enforce safety interlocks with light curtains, door sensors, and part-presence sensors, tracing control-cabinet wiring to implement and troubleshoot machine states.
- Designed and manufactured a custom end-of-arm tooling plate integrating a pneumatic piston and sensor alongside the robot's magnetic gripper, iterating the mount geometry in CAD/CAM to reduce the tooling envelope and eliminate collision risk.
- Reverse-engineered a production heat-treat furnace conveyor in CAD and developed CAM programs and custom workholding to machine replacement rollers, links, pins, bosses, and sprockets for a full conveyor rebuild.
- Hand-measured a fractured furnace component, reconstructed its geometry in CAD, and supported manufacture of a replacement part to restore production equipment.

Menards — Yard Associate / Forklift Operator

Jan 2025 – Aug 2025

- Operated forklifts and material-handling equipment to unload trucks and organize outdoor inventory in a fast-paced yard environment, reinforcing safety and reliability under pressure.

PROJECTS

Hand-Launched Glider — Team Lead

- Led design, fabrication, and iterative flight testing of a hand-launched glider, refining geometry and trim across build cycles to improve stability, achieving a 179 ft flight distance and 6.35 s flight duration from a ground-level launch.

B-36 Peacemaker — Siemens NX Aircraft Model

- Modeled a high-fidelity Convair B-36 Peacemaker in Siemens NX, building fully constrained assemblies for the fuselage, wings, propulsion, and landing gear with moving mechanical components and a rendered engineering animation.

Model Rocket Design & Flight Test

- Designed and iterated a model rocket in OpenRocket, simulating flight performance against a 325 ft target altitude and validating the design through a live flight test that reached approximately 360 ft.

LEADERSHIP & INVOLVEMENT

Liquid Rocketry at Illinois — Member, Engine Subgroup

- Contribute to engine design discussions and propulsion subsystem analysis within the engine subgroup.

ISS SpaceShot — Member

Triangle Fraternity, UIUC — Merchandise Coordinator, Rush Chair, Social Chair

- Led event logistics, vendor coordination, and merchandise procurement, and directed recruitment efforts as part of the chapter's executive leadership.