John Yaklin

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Education

University of Illinois Urbana-Champaign Expected December 2026
Master of Engineering in Mechanical Engineering December 2025
Bachelor of Science in Mechanical Engineering GPA 4.0 / 4.0

- Coursework – plasma physics, computational mechanics, nanomanufacturing, industrial control systems

Black Hawk College – Moline, IL June 2021 – May 2023
Associate of Science in Mechanical Engineering GPA 4.0 / 4.0

- Dual enrolled during high school, 72 credit hours earned

Experience

Illinois HackerFab, Process Engineer – Urbana, IL September 2025 – present

- Developed repeatable dry film photoresist lamination process to reduce film wrinkles in low-cost IC prototypes

TSMC, Dry Etch Equipment Engineer Intern – Phoenix, AZ May 2025 – August 2025

- Developed coolant level monitoring system for plasma etch tool to save ~$30K / year in labor, coolant, yield
- Collaborated with equipment, manufacturing, and supplier teams to find key project information
- Conducted leak detection and root cause analysis to identify two hidden coolant evaporation sources
- Applied Python, ROS, Docker, and shell scripting to create data analysis, extraction, and reporting tools

iRobotics, Robotics Engineer – Urbana, IL September 2023 – September 2025

- Developed motor controller circuit boards to help combat robots drive upside down
- Wrote custom motion control and data collection software for embedded microcontrollers on combat robots

***FIRST* Tech Challenge**, Robotics Engineer – Bettendorf, IA May 2018 – June 2023

- Designed experiments to compare designs, materials, and control inputs for robotic systems
- Led problem-solving activities using TRIZ structured methodology to leverage solutions in unrelated fields
- Optimized hardware and software for record-setting <2s task cycles and <5m maintenance cycles
- Developed position sensor module adopted as global gold standard for over 2 years

Projects

- Designed 2^3 factorial experiment to map effects of control inputs on melt depth for metal 3D printers
- Coupled evolution-inspired optimizer with finite element simulation in Python to design compliant mechanism
- Developed dielectric mirror optic simulator in Python for solar energy device performance characterization
- Researched low temperature vapor deposition processes for dielectric layers on low-cost polymer substrate

Skills

- Familiarity with semiconductor process steps: lithography, dry etch, wet etch, PVD, CMP, etc.
- CAD: Creo, Onshape, Inventor, AutoCAD, nTop (topology optimization), KiCad (circuit design)
- Data analysis and system modeling: Python, MATLAB, Java, Excel, Bash, Arduino, C/C++, Git (version control)

Awards

- Helped robotics team earn #1 award in state for 4 consecutive years, top 1% worldwide