

# Michael Aksen

FE Certified Mechanical Engineer

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## EDUCATION

Rensselaer Polytechnic Institute (RPI), Troy, NY  
**Master of Engineering in Mechanical Engineering**

May, 2023  
GPA: 3.3/4.0

Rensselaer Polytechnic Institute (RPI), Troy, NY  
**Bachelor of Science in Mechanical Engineering**

May, 2022  
GPA: 3.6/4.0

## PROJECTS

**Computerized Industrial Bandsaw** — The Factory Amsterdam August 2021 — May 2023

- Upgraded a 40-year-old industrial bandsaw to the digital age by replacing its mechanical relay logic with a PLC and ladder logic, increasing throughput and reducing downtime by 80%
- Self-taught PLC programming, Industrial wiring/logic diagrams, and IIOT integration
- Collected band speed data by hardwiring an analog PLC module to a tachogenerator-rectifier circuit

**Atomic Orbital Kinematics** — Spaceflight Mechanics, RPI Jan 2023 — May 2023

- Derived the atomic orbital kinematics of a hydrogen atom to 91% accuracy using the Bohr atomic model by applying the 2-body problem to the governing Coulomb law and simulating results using ode45 in MATLAB

**Robotic Manipulator** — Robotics I, RPI Sept 2022 — Dec 2022

- Implemented Forward & Inverse Kinematics algorithms in python for 6-DOF robot arm
- Developed & Demonstrated path planning, PID control, and obstacle avoidance implementations in python

**300 Toy Airplanes** — Manufacturing Processes and Systems Lab I & II, RPI Sept 2021 — May 2022

- Co-led a team of 12 students in the fabrication of 300 toy airplanes using various industrial processes
- Engineered a forming die to produce 300 steel wheel wires, adhering to DFM principles
- Programmed a pick-and-place robot to assemble injection-molded wings with a 95% success rate

## WORK EXPERIENCE

**United Aircraft Technologies**, Associate Mechanical Engineer, Pittsfield, MA Oct 2023 — July 2024

- Supported the Smart Clamp pilot program in Madison, WI by performing preliminary Ansys FEA analysis, coordinating with vendors, and 3D printing functional prototypes
- Developed 2D and 3D CAD drawing templates with automated property values in SolidWorks to standardize CAD drawings across our enterprise
- Researched & Experimented w/nylon as an alternative 3D printing material to Onyx w/47% cost reduction
- Completed EdX Ansys Engineering Simulation and SolidWorks training courses; received CSWA certificate

**The Factory Amsterdam**, Engineering Intern/Researcher, Amsterdam, NY June 2021 — May 2023

- Enhanced the operational capabilities of a 40-year-old industrial bandsaw by integrating a PLC and bridging the IT/OT gap by connecting the saw to a cloud-based data historian
- Designed a CNC tooling fixture to machine nerf gun components

**USPS Engineering**, Vehicle Engineering Intern, Merrifield, VA Jan 2020 — Apr 2020

- Engineered and welded a steel assembly to assess the performance of an autonomous delivery vehicle

## COMPETENCIES & AWARDS

**Software:** SolidWorks, NX, NX Nastran, Simulink, Ansys Mechanical, LabView, Excel, Mastercam, Minitab

**Manufacturing:** 3D Printing, Machining, MIG Welding, DFM, Lean VSM, Waterjet, CNC Milling, Arduino

**Programming:** Java, Python, PLC Ladder Logic, MATLAB, HTML, C, LaTeX, SQL, GIT, assembly

**Certifications:** FE Certified, CSWA-Mechanical Design, Ansys STK Level I

**Awards:** Gene Haas Manufacturing Award Recipient (2021), RPI Elevator Pitch Competition 3<sup>rd</sup> Place (2020)