Michael Aksen

FE Certified Mechanical Engineer

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Education

Rensselaer Polytechnic Institute (RPI), Troy, NY — May, 2023
Master of Engineering in Mechanical Engineering — *GPA: 3.3/4.0*

Rensselaer Polytechnic Institute (RPI), Troy, NY — May, 2022
Bachelor of Science in Mechanical Engineering — *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 Kinematic algorithms in Python and MATLAB 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 connecting the saw to a cloud-based data historian to bridge the IT/OT gap
- 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

Mechanical: 3D Printing, Machining, MIG Welding, DFM, VSM, SolidWorks, NX, NX Nastran, Ansys FEA
Electrical: PLC Ladder Logic, MATLAB, Simulink, Arduino, LabView, Minitab, Soldering, IIOT
Programming: Java, Python, Excel, 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 3rd Place (2020)