MICHAEL AKSEN

Contact

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Education

Master of Engineering in Mechanical Engineering
Rensselaer Polytechnic Institute
Troy, NY (2022- 2023)

Bachelor of Science in Mechanical Engineering
Rensselaer Polytechnic Institute
Troy, NY (2018 - 2022)

Academy of Science & Technology
Bergen County Academies
Hackensack, NJ (2014-2018)

Certifications

FE Mechanical Certification
Issued by: NCEES

STK Level I Certification
Issued by: Ansys

CSWA-Mechanical Design Certification
Issued by: SolidWorks

Awards and Honors

RPI Inventors Studio Startup Founders Award Recipient
RPI Inventers Studio (2023)

Gene Haas Manufacturing Award Recipient
Allendale HFO (2021)

RPI Elevator Pitch Competition – 3rd Place
RPI (2020)

BCA Research Expo First Place in Engineering Award
BCA (2018)

Professional Summary

Motivated and results-oriented Mechanical Engineer with extensive hands-on experience in CAD design, FEA analysis, robotics, and automation. Proficient in integrating advanced technologies like PLCs, IIoT, and 3D printing to streamline manufacturing processes and boost system performance. Adept at leading engineering teams, designing prototypes, and creating detailed technical documentation for complex systems. A strong communicator with a passion for innovation and a proven track record of delivering effective engineering solutions.

Experience

Associate Mechanical Engineer • United Aircraft Technologies, Inc.
Pittsfield, MA
October 2023 – October 2024

- Enhanced enterprise CAD workflows by introducing and documenting advanced SolidWorks tools including exploded views, configurations, and interference analysis.
- Researched and implemented nylon as a cost-effective 3D printing material, reducing prototyping costs by 47%
- Designed and tested SLA 3D printed molds for substrate production, supporting clamp design and other prototypes.
- Conducted FEA analyses of clamp mechanisms and created new material models in Ansys, enhancing simulation accuracy for future projects.
- Improved operational efficiency by creating custom UAT software templates, developing quote calculators, and surveying Makerspaces for prototyping solutions.

Manufacturing Engineering Intern • The Factory Amsterdam
Amsterdam, NY
June 2021 – May 2023

- Replaced the relay logic of a 50-year-old industrial bandsaw with a PLC and digital logic to reduce downtime and improve throughput
- Designed a CNC tooling fixture to machine components for nerf guns, optimizing precision and production efficiency.

Vehicle Engineering Intern • United States Postal Service
Merrifield, VA
January 2020 – April 2020

- Designed and MIG-welded a steel assembly to test the performance of an autonomous delivery vehicle.
- Created a layout of the steel assembly in AutoCAD to ensure compliance with vehicle safety standards; Created a 3D model of the assembly in NX

Software Engineering Intern • BrightLogic
Midland Park, NJ
September 2017 – July 2018

- Developed a log-collection back-end interface for a mobile app using JavaScript and C# to systematically send bugs from local versions of the app to a centralized server for classification and revision

Key Skills

Engineering Skills:

- CAD Design
- Finite Element Analysis (FEA)
- PLC Programming
- 3D Printing and Prototyping
- GD&T
- Lean Manufacturing
- Design for Manufacturing (DFM)
- Hand-Calculations

Software:

- MATLAB, Simulink, SolidWorks, Ansys Mechanical, STK, Siemens NX, NX Nastran, LabVIEW, ProModel, Minitab, Mastercam, Arduino, MS Excel, AutoCAD, VKS

Hardware:

- FDM & SLA 3D Printers, MIG Welding, Machining, Soldering, PLCs

Programming:

- Python, Java, SQL, HTML, PLC Programming, GIT, Arduino C

Technical Documentation:

- Technical Data Packages
- Standard Operating Procedures
- Value-Stream Mapping
- Manufacturing Work Instructions
- Gantt Charts

Soft Skills:

- Leadership and Team Management
- Problem-Solving
- Analytical Thinking
- Effective Communication
- Cross-Functional Collaboration
- Independent Learning
- Fluent in Russian & English

Affiliations

RPI Habitat for Humanity Club
President (2020 – 2023)

Order of the Engineer
Member

Notable Engineering Projects

Computerized Industrial Bandsaw — The Factory Amsterdam

- Upgraded a 40-year-old industrial bandsaw by replacing 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.
- Integrated a tachogenerator-rectifier circuit into an analog PLC module to collect and measure band speed.

300 Toy Airplanes — Manufacturing Processes and Systems Lab I & II, RPI

- Co-led a 12-member team to fabricate 300 toy airplanes utilizing diverse industrial processes.
- Designed and fabricated a forming die to produce steel wheel wires, ensuring adherence to DFM principles.
- Programmed a pick-and-place robot achieving 95% assembly success for injection-molded wings.

Atomic Orbital Kinematics — Spaceflight Mechanics, RPI

- Modeled hydrogen atomic orbital kinematics using the Bohr atomic model and 2-body problem dynamics.
- Simulated results in MATLAB with ode45, achieving 91% accuracy.

Robotic Manipulator — Robotics I, RPI

- Developed Forward and Inverse Kinematics algorithms for a 6-DOF robotic arm using Python and MATLAB.
- Demonstrated path planning, PID control (<0.5% steady-state error), and obstacle avoidance in Python.

Mini-Segway Controller — Mechatronics, RPI

- Developed an electromechanical control system to balance a mini-Segway for over 2 hours using a PID controller implemented in MATLAB and Simulink.