Jacob A. Pomerantz

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EDUCATION

Northwestern University, Evanston, Illinois; GPA: **3.52**
Bachelor of Science in *Mechanical Engineering,* *Manufacturing Concentration, Segal Design Certificate*
Relevant Coursework: Fluid Mechanics, Thermodynamics, Mechanics of Materials, Programming in Python

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RELEVANT EXPERIENCE

Argonne National Laboratory: Science Undergraduate Laboratory Intern   06/24 - 09/24
- Researched and developed fast-acting sampling system for intermediate species extraction during rapid compression machine (RCM) experiments for implementation into GCMS.
- Designed gas-tight pneumatic sequencing valve to simplify pneumatic chamber evacuation for RCM piston retraction.
- Performed stress analysis and FEA on valve system, rating each component for 450 psi with a minimum safety factor of 3.

Ford Engineering Design Center: Shop Trainer   09/23 - Present
- Employed by Northwestern University in the Ford Design and Manufacturing Shop ~ 8 hours per week to train and assist undergraduate and graduate students in use of mills, lathes, bandsaws, laser cutters, CNCs and other machines.
- Work with other students involves applications for research, class, and other personal projects.
- Complete modules on manufacturing methods and applications to broaden personal skills.

Research Assistant: McCormick School of Engineering   09/23 - Present
- Collaborate with Professors Kornel Ehmann and Ping Guo to manufacture automated implant device for delivery of HIV medication.
- Manufacture and assemble machine with 4 integrated processes: cutting TPU plastic to deliver medication, implanting HIV tablets, sealing ends of implant, and removing formed medication from machine.
- Work has required extensive redesign of prior prototype, identification and ordering of appropriate parts, manufacturing of new and old components, and testing of new design's functionality.

Northwestern Formula Society of Automotive Engineers: Powertrain Sub-team   10/22 - 06/24
- Active member (8-10 hours per week) of team responsible for maximizing power output of electric vehicle for competition, while optimizing cost and weight.
- Team lead designing accumulator container and mounts for NFR 24. Applied CAD, FEA, and CAM software to design, test, and manufacture battery container and mounts.
- Manufacturing responsibilities included operation of waterjet and other CNCs to produce array of car components, and assisting chief engineer with welding car chassis.

ADDITIONAL EXPERIENCE

Positions: Hilton Garden Inn breakfast chef, EMT, Colorado-licensed business owner
Projects: X-ray positioning device for use with immobile patients, Electric skateboard with 12s3p battery configuration

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SKILLS

Computer: Proficient in SolidWorks, Inventor, Python, MatLab, HTML 5, CSS 3, FeatureCAM, Excel, and Powerpoint
Language: Spanish & Hebrew (conversational)