Jacob Niv

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Summary

Biomedical engineer who combines a passion for tinkering, lab experience, and engineering principles to create intuitive, seamless designs for improving the quality of life in patients.

Education

Case Western Reserve University *Anticipated Graduation: May 2027*

Bachelor's of Science, Biomedical Engineering: Biomechanics *Cleveland, OH*

- **Cumulative GPA**: **3.32** | CWRU University Scholarship
- **Relevant Coursework**: Anatomy & Physiology II, Biomaterials + Lab, Biomechanical Prosthetic Systems, Biomedical Computer Simulation Lab, Biomedical Instrumentation Lab, Chemistry of Materials, Circuits, Design and Manufacturing, Differential Equations, MatLab, Modeling of Biomedical Systems, Physical Dynamics, Signals and Systems + Lab

Skills

- **Software & Technical**: 3D-printing, CAD, Fusion 360, Matlab, Solidworks
- **Laboratory**: Biochemical Assays, Fabrication
- **Soft Skills**: Customer Service, Customer-oriented design, Engineering documentation, Teamwork

Work/Leadership Experience

President & External Affairs January 2024 — Present

Network for Environmental Medical Outreach *Cleveland, OH*

- Demonstrate the environment's importance in human health to CWRU and Cleveland
- Coordinate collaborations, guest speakers, and funding from external organizations and industry mentors
- Ensure operations reflect club constitution, drive membership, and cooperate with university guidelines

Research Lab Assistant June 2022 — August 2022

Jay Lab - Department of Bioengineering at University of Maryland *College Park, MD*

- Researched and used novel methods for mechanically isolating extracellular vesicles from gut bacteria for drug delivery which resulted in improved purification yield
- Performed biochemical assays, microscopy, and spectroscopy for identification and quantification of results

Projects

Prosthetic Card-Holding Hand, Team Lead

- Led a group to design and build a prosthetic to restore a below-elbow amputee's ability to hold and hide playing cards
- Prototyped adjustable, comfortable, and sweat adsorbent attachment points and a customizable front design
- Presented prototype and metrics to a panel of BME professors and peers for feedback

Biomimetic Finger

- Used EMG sensor and microcontrollers to control a 3D-printed biomimetic finger
- Documented design and in situ experimentation process

Drone Delivery System

- Designed the user interface and structure of a legally compliant package system
- Researched FAA regulations to determine the legal classification of the drone system

Powerless Vacuum

- Worked in a group to design a novel consumer product manufacturable with machine shop and factory tools
- Ensured compliance with university engineering documentation standards

3D Design & Prototyping

- Modeled complex designs (Millennium Falcon) across Fusion360, Blender, and SolidWorks
- Designed and 3D printed silent fidget toys through iterative feedback-driven development, resulting in a design so compelling that strangers would spontaneously ask to buy them from me