

Andrew Chin

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EDUCATION

COLUMBIA UNIVERSITY

New York, NY

MS in Mechanical Engineering, *GPA: 4.00/4.00*

May 2025

Courses: Biomedical Innovation, Robotics, Biomechanics, Elasticity Theory, Robot Learning, Micro Electrical Mechanical Sensors and Systems.

COLUMBIA UNIVERSITY

New York, NY

BS in Mechanical Engineering, *GPA: 3.99/4.00*

May 2024

Courses: Robotics Studio, Machine Design, Digital Manufacturing, Materials and Processes in Manufacturing, Classical Control Theory, Computer Aided Design.

COLLEGE OF THE HOLY CROSS

Worcester, MA

BA in Physics, *GPA: 3.88/4.00*

May 2024

SKILLS

SolidWorks, Creo, Fusion 360, AutoCAD, Finite Element Analysis, ANSYS, MATLAB, Arduino IDE, Python, ROS, RViz, MS Office (PowerPoint, Word, Excel), 3D Printing (FDM, SLA, & SLS), Silicone Casting, CNC Milling, Laser Cutting.

PROFESSIONAL EXPERIENCE

LILU, INC.

New York, NY

Lead Product Engineer

May 2024 - Present

- Lead engineering design of a patent pending wearable breast pump employing SolidWorks and additive manufacturing methods within an iterative and rapid prototyping design process to optimize component integration.
- Conduct verification and validation testing of custom PCB firmware and outsourced manufactured SLA, silicone and TPU components with custom designed testing experiments to inform design changes for works-like prototype.
- Prepare documentation of design changes, material selection and manufacturing file submissions to manage four Chinese vendors, ensuring timely procurement of prototype components and adherence to project timelines.

LILU, INC.

New York, NY

Engineering Intern

Jan 2024 - May 2024

- Conducted extensive research on flexible fabric strain and pressure sensors and designed custom strain gauge Arduino controlled circuit and test jig, facilitating identification of a viable pressure sensor for smart bra project.
- Led preliminary design phase of wearable breast pump, analyzing needs of moms with industrial designer and modifying initial Rhino designs in SolidWorks to feature proper engineering tolerances for seamless assembly and functionality.
- Configured electromechanical components within breast pump controller housing in SolidWorks, maximizing internal volume and allowing for the decrease of 15% in overall product size and weight.

TOBYHANNA ARMY DEPOT

Coolbaugh Township, PA

Production Engineer Student Trainee

Jul 2023 - Aug 2023

- Drafted engineering drawings and modeled component mechanisms for naval defense systems in Creo with proper sheet metal GD&T, providing the depot with a means to continue the production of designated projects.
- Created bills of materials and routes within the depot enterprise resource planning system, increasing the efficiency of production and fabrication for the naval defense system.

ACADEMIC EXPERIENCE

COLUMBIA UNIVERSITY

New York, NY

Stroke Patient Hand Orthosis Robot Research Assistant

Sep 2024 - May 2025

- Design and prototype a modular vibration motor mounting system with a custom protoboard and 3D-printed components constructed in SolidWorks, improving connection reliability and reducing robot setup time by 75%.
- Utilize ROS to characterize an electromagnetic 6-DOF tracking sensor within RViz, allowing for the decrease in sensor footprint within overall robot by over 50%.

COLUMBIA UNIVERSITY

New York, NY

Senior Design Project

Sep 2023 - May 2024

- Collaborated in a team of five to design and construct a fully mechanical patent pending assistive device to allow individuals with gripping disabilities to perform pulling exercises in the gym.
- Prototyped main locking mechanism, using SolidWorks and 3D printing, to enhance the mechanical advantage supplied by a linkage system, allowing for simple one-handed activation with a constant actuation force of one pound applied by wrist.
- Employed finite element analysis in SolidWorks within an iterative design process of geometric and material assignment alterations, resulting in a factor of safety of three and a maximum loading capacity of 600 pounds.

COLUMBIA UNIVERSITY

New York, NY

Machine Design Arcade Button Mechanism Project

Sep 2023 - Dec 2023

- Collaborated in a team of five to design, manufacture and program a four bar linkage system to press arcade buttons in a random sequence.
- Spearheaded kinematic planning, transmission backlash reduction and Arduino IDE PID control system tuning and sensor usage to bring linkage to precise button locations.
- Modeled detailed CAD assembly of linkage system, ground plate, hard stops and electromechanical components with corresponding housing in SolidWorks and machined them with CNC milling and laser cutting techniques.