

LUKE S. RICHARDSON

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PROFESSIONAL EXPERIENCE

Mechanical Engineer (Jan. 2024 – Feb. 2025)

MIDI Product Development. – Smithtown, NY

- Designed mechanical components and complex assemblies, for a range of clients, optimizing manufacturability with processes such as injection molding, CNC machining, sheet metal fabrication, etc
- Utilized FDM and SLA printing technology for both rapid prototyping and functional trade show models
- Utilized Solidworks Simulation to perform FEA and CFD analysis and validate designs
- Tracked regulatory requirements including IEC 60601 and applicable UL requirements to ensure compliance with appropriate standards

Product Development Engineer (Mar. 2021 – Jan. 2024)

A Step Ahead Prosthetics – Hicksville, NY

- Led all research and development, from initial concept to final product at an innovative prosthetics facility
- Developed a shuttle-lock assembly for use in all lower-limb patients' prosthetic sockets (~ 500 per year), increasing performance, while reducing cost by over 75%
- Developed more affordable linkage-based, body-powered partial hand prosthetics used to treat multiple patients, by utilizing SLS and DMLS additive manufacturing
- Developed prosthetic components and custom prosthetic solutions (sports attachments, etc.) for a wide range of patient conditions using Creo Parametric
- Supported daily operations of the prosthetics facility on more complex cases where 3D scanning, solid modeling, CNC machining, and mold-making were required

Mechanical Engineer (Sep. 2019 – Mar. 2021)

Source-Ray, Inc. – Ronkonkoma, NY

- Contributed to the product development of x-ray source blocks and portable x-ray systems by designing weldments, sheet metal, CNC machined, and various other components in Solidworks
- Responsible for all engineering change documentation and hosting related meetings
- Responsible for the creation of all new and revisions to existing work instructions for the production floor
- Managed project books containing all engineering design and regulatory documents and acted as the design engineering representative during UL audits

Mechanical Engineering Intern (Sep. 2018 – Sep. 2019)

Air Techniques – Melville, NY

- Contributed to the product development of digital radiography systems for the dental industry. Designed sheet metal, CNC, and injection molded parts in Solidworks
- Worked with vendors to design compartmentalized packaging for two new products
- Designed and prototyped test fixtures using 3D printing
- Conducted product reliability HALT testing

Test Engineering Intern (Nov. 2017 – Apr. 2018)

CVD Equipment Corporation – Central Islip, NY

- Performed electrical verification and vacuum leak-back testing on large-scale chemical vapor deposition systems, documenting any discrepancies, while detailing how to resolve them
- Prepared test documentation for customer factory acceptance

EDUCATION

Stony Brook University, Stony Brook, NY

M.S., Mechanical Engineering, GPA: 3.63

Jan. 2018 – May 2019

B.E., Mechanical Engineering, GPA: 3.57 (*Cum Laude, University Scholars*)

Aug. 2014 – May 2018

Georgia Institute of Technology, Atlanta, GA

M.S., Computer Science (*Computational Perception and Robotics*)

Aug. 2022 – Present

TECHNICAL SKILLS

CAD: Solidworks PDM, Creo Parametric, Siemens NX

Programming: Python, MATLAB, C++, Arduino, LabVIEW

Other: GD&T, DFM / DFA, FEA / CFD analysis, 3D Printing, machining (lathe, mill, CNC), soldering