

Ryan Koeppen

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Mechanical engineer with 4+ years of product and mechatronics design experience with a focus on R&D and product development. Internships experience with user-centered design, DFM, DFA, FEA, FMEA, and generating drawings for designed components. Research project experience spans concept generation, hands-on prototyping, and testing.

Education

Massachusetts Institute of Technology (MIT) | Cambridge, MA | GPA: 5.0 / 5.0

Candidate for Master of Science (M.S.) in Mechanical Engineering

Expected June 2021

Bachelor of Science (B.S.) in Mechanical Engineering

June 2019

· Minor in Biomedical Engineering

Experience & Projects

Graduate Researcher | MIT Device Realization Laboratory

September 2019 – Present

- Develop three different attachments for ultrasound probes to improve imaging repeatability
- Design, model, and prototype hardware to control 3 actuators and manage measurements from 5 sensors
- Maintain error budget to predict system performance and measurement precision
- Validate system performance with engineering tests and human subject trials

**Mechanical Design Intern | Philips Healthcare | Andover, MA
Bothell, WA**

June 2019 – August 2019

June 2018 – August 2018

- Eliminated at least 5 manufacturability and field-use problems on accessory system for ultrasound carts
- Created and evaluated feasibility of concept for central-locking wheels across multiple types of carts
- Recommended design changes to injected molded parts based on FEA results to increase part strength by 20%
- Developed a bolted joint analysis tool in MS Excel to streamline future engineering work

Long-Term Gastrointestinal Resident Device | MIT Langer Laboratory

January 2018 – June 2019

- Designed a novel device to reside in gastrointestinal tract for 1 month to deliver medication
- Fabricated prototypes with parts less than 1cm using CNC machining and SLA printing
- Assessed viability of design concepts (mechanical and electrical) through modeling and bench-level testing
- Coordinated a team of 5 engineers to prepare for in vitro testing, journal publication, and patent application
- Maintained master Solidworks CAD assembly with over 10 custom-designed components

Mechanical Engineering Intern | Covaris Inc. | Woburn, MA

May 2017 – August 2017

- Performed tests to identify design changes for improving life of biological sample conditioning system
- Designed test fixtures to help with root cause diagnostics during iterative design
- Prototyped heat jacket to maintain sample temperature within 1°C during transport between system components
- Conducted FMEA on system and recommended preventative interventions

Skills & Activities

Engineering: CAD/PDM, DFM, DFA, FEA, FMEA, Machine Design, Mechanical Drawings

Manufacturing: Machining, Plastics Molding, Laser Cutting, Additive Manufacturing (SLA and FDM)

Software: SolidWorks (CAD), MATLAB/Simulink, HSMWorks (CAM), Arduino, Python, C/C++

Graduate Teaching Assistant: Mechanics and Materials II

January 2020 – May 2020

Graduate Teaching Assistant: Thermal-Fluids Engineering II

September 2019 – December 2019