

SHUBHAM KHAWALE

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EDUCATION

Purdue University, West Lafayette, IN

Master of Science in Mechanical Engineering

Coursework – Strategic Management, Product Design, Mechatronics, Quality Control, Industrial Robotics, Artificial Intelligence

August 2021 - May 2023

GPA - 3.54/4

Savitribai Phule Pune University, India

Bachelor of Engineering: Mechanical Engineering

Coursework - Mechanical System Design, Dynamics of Machinery, Finite Element Analysis, CAD CAM Automation

July 2015 - June 2019

CGPA - 8.29/10

CORE PROFICIENCIES

Product Development | Prototyping | Technical Documentation | Patent Research | Acoustics | Loudspeaker Systems Design | Audio Test Equipment | System Integration | SolidWorks | Fusion 360 | Creo | AutoCAD | GD&T | ANSYS | COMSOL | KLIPPEL | ARTA | AKABAK | LMS | Room Eq Wizard | VituixCAD | Python | Jira | MS Office

WORK EXPERIENCE

Eminence Speaker LLC, Eminence, Design Engineering Intern

August 2022 - December 2022

- Formulated CAD drawings and acoustical measurements for 100+ transducer models while working in R&D with full ownership.
- Created a VBA database system to streamline driver data management, improving product development speed and efficiency.
- Developed and optimized subwoofer enclosures and multiple passive 2-Way crossovers for professional applications.
- Aided engineering lab with performing Linear Parameter, Large Signal, and Distortion Measurements using Klippel Distortion Analyzer and captured acoustical measurements: frequency and impedance data employing Loudspeaker Measurement System.
- Took part in EIA and AES power tests, acquiring knowledge and experience in driver testing and following established standards.
- Generated performance reports and examined correlations in sample measurements and presented to lab and customers.
- Led over 10 customers through technical support, transducer selection, and loudspeaker systems design process.
- Partnered in scientific and patent research related to loudspeaker development to verify technology commercialization.
- Discovered new opportunities for company growth and market expansion to increase customer exposure and sales.

ARC UAS Inc, West Lafayette, Robotics Engineering Intern

June 2022 - August 2022

- Deployed rapid prototyping and 3D printing methods to prepare reinforcing framework for package containers.
- Researched designs and academic papers to devise a winch system to pick and drop-off variety of payloads.
- Collaborated in building, assembling, and testing of unmanned aerial vehicles.

Sanjay Electronics, India, Design Engineer

June 2019 - July 2021

- Designed premium home audio systems through full product development lifecycle including designing, manufacturing, assembling, fabrication, testing, and validation to ensure product meets client specifications.
- Spearheaded electro-acoustic prototyping and development of professional loudspeaker enclosures for drivers up to 21 inches.
- Conducted extensive acoustic measurements and simulations for transducers utilizing computer-based measurement setup.
- Reduced electro-mechanical systems failure by 40% by troubleshooting and providing root cause analysis.
- Managed procurement of raw materials and OEM components from national and offshore companies.
- Conducted frequent domestic travel to suppliers for business and engineering meetings and visited clients on-site for testing and support of loudspeaker systems.

Sanjay Electronics, India, Mechanical Engineering Intern

June 2018 - May 2019

- Evaluated current technologies and performed product benchmarking by prototyping audio systems.
- Performed cost-benefit analysis to estimate and identify project opportunities and saved USD 25K+ in costs.
- Utilized extensive knowledge of mechanical, thermal, and acoustic engineering to drive the development of loudspeaker systems.
- Researched and devised suspension hardware for loudspeaker rigging and optimized designs through finite element analysis.
- Examined component prototypes to ensure conformance to design specifications and provide technical assistance in areas of hardware performance and optimization and debugging.

PROJECTS

Autonomous Free-Throw Robot

September 2021 - December 2021

- Conceptualized on 3 separate system architectures and technologies of a ball throwing robot.
- Integrated IR sensors and motors in robot with Arduino to implement its movement by line following algorithm.

Design of Low Frequency Transducer Enclosure

September 2018 - November 2018

- Engineered and manufactured a bass-reflex enclosure for low frequency subwoofer tuned to a resonance frequency of 42 Hz with balanced frequency response and minimal air-port turbulence.