SARAANSH SAXENA

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PROFESSIONAL SUMMARY

Motivated and results-driven professional with 4 years of experience in product development, specializing in 3D modeling, finite element analysis, and PCB design. Proficient in utilizing CAD to enhance design accuracy and efficiency. Skilled in driving projects from concept through manufacturing, demonstrating strong problem-solving skills and a commitment to quality assurance. Proven ability to collaborate cross-functionally and manage supplier relationships to meet project deadlines and exceed performance standards.

TECHNICAL SKILLS

CAD: SOLIDWORKS, Fusion360, AutoCAD, Eagle; Programming: C, MATLAB, Python; Simulation: ANSYS (Finite Element Analysis FEA, Maxwell, HFSS) FEMM; Miscellaneous: DFM/DFA, Additive manufacturing (3D Printing), GD&T, DFMEA

WORK EXPERIENCE

Paramagnetix Inc. (*California***) -** *Senior Product Development Engineer* **May 2022 – Present**

- Developed a portable chemical analysis device for food quality and safety, directing the project from conceptual ideation to functional proof of concept ***(Patent pending -*** *"Handheld Device for Detection of Paramagnetic Species and Method of Operation."* Application # 18/467,618, filed September 14, 2023***)***.
- Created an ergonomic analyzer enclosure with a sample insertion tool based on human-centric design approaches and design for manufacturing and assembly (DFM/DFA), in collaboration with a design firm.
- Designed RF boards and custom PCBs for electrical system, integrating battery management, touch screen controllers, sensors, actuators, microcontroller and microprocessor into the enclosure while collaborating with cross-functional teams.
- Built an embedded C software architecture for sensor integration and data collection. Devised a user-friendly interface for effortless engagement and clear on-screen result visualization. Created specialized debugging software to streamline testing.
- Refined magnet layout and movement mechanism of the device with Ansys Maxwell simulations, achieving 2X sensitivity and noise reduction; Prototype development using 3D printed mockups for different design iterations as well as test bench for validation.

Shutterfly Inc. (*Arizona***) -** *Equipment Engineer* **August 2020 – May 2022**

- Transformed the digital print maintenance program from preventive to predictive for high-capacity printing presses, leveraging on-device data, reducing onsite repairs by 30%, and enhancing machine throughput by 20%.
- Formulated standard operating procedures for diverse high-capacity machinery, enriching expertise and boosting team productivity, resulting in a 33% reduction in onsite repair call times.

Benteler Automotive India Pvt. Ltd. (*India***) -** *Manufacturing Intern* **Jan 2017 – July 2017**

- Enhanced production quality and efficiency via root cause analyses, statistical process control, and optimizing die designs, achieving a 75% reduction in B-pillar failure rates and elevating production efficiency.

TATA Motors Pvt. Ltd. (*India***) -** *Mechanical Design Intern* **Jan 2016 – July 2016**

- Designed and fabricated attachments for existing jigs, transitioning from a stationary to a moving production line for 4X4 front axle assembly; prioritizing modularity of the fixture while adhering to ISO 1101:1983 standards.

RESEARCH EXPERIENCE

Arizona State University- *Research Assistant* **Oct 2018 – May 2020**

- Innovated an advanced anomaloscope, capable of classifying individuals into an array of 14 distinct color-blindness categories—compared to the conventional Ichihara test, limited to 5 categories. [Patent pending - "Color Matching Anomaloscope with Improved Precision in Determination of Color Acuity in Subjects." Application # 17/494,147, filed October 05, 2021.]
- Designed a custom PCB and an integrated control apparatus featuring a sophisticated multi-channel Spectral Color Sensor. Developed and optimized embedded C and Python programming for seamless hardware interfacing and user-friendly device control.
- Acquired expertise from the Collaborative Institutional Training Initiative to administer tests and collect data from human subjects that were leveraged to fine-tune and enhance the device's performance and precision.

Universitat Politècnica de Valencia - *Researcher* **Feb 2018 – July 2018**

- Developed an Artificial Neural Network model with 80% accuracy, proficient in predicting engine performance across diverse operating conditions—enhanced model performance by optimizing data lag and mass flow, resulting in processing time reduction.
- Conducted experiments to quantify pollutant emissions from a direct injection diesel engine, reducing CO emissions by 20%.

EDUCATION

Campbellsville University - *Master of Business Administration (Hybrid)* **June 2023 – Present**

Arizona State University - *Master of Science in Mechanical Engineering* **Sep. 2018 – May 2020**

SRM University, India - *Bachelor of Technology in Mechanical Engineering* **Aug. 2014 – May 2018**