

Gautam Iyer

Biomedical Engineer

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Astute Biomedical Engineer possessing excellent critical thinking and communication skills. Offering two year background designing and analyzing solutions for medicine and biology-related problems. Polished in designing and simulation of surgical biomedical devices such as Intraocular Lens delivery instrument and Cardiac Patch delivery instrument, and evaluating safety and efficiency of equipment. Solution-oriented professional certified in Project Management and Product Development.

Skills

Research and analysis
Project Management
Product development
Problem anticipation and resolution
Engineering documentation
Time management

Work History

2020-11 - 2021-02

Engineering Intern

Optik Engineering Consultancy, UTS, Sydney, NSW

- Utilized extensive background knowledge and expertise in engineering methodologies to solve design problems according to schedule. Brainstormed with peers and other members of design team to determine enhancements and product features.
- Researched and reported on how semi-automated robotic control system impacts delivery of 3D bio-printed cardiac patch for Minimally Invasive Cardiac Surgery. Produced rapid prototypes using 3D printing.
- Verified achievement of research objectives to deliver valuable insight regarding influences on anatomical changes in keyhole surgery.
- Streamlined tasks in effort to provide easier and more efficient workflows for peers and colleagues. Managed two projects effectively in demanding environment with tight deadlines of 3 months. Documented each step in

product's design process for use in brochures.

- Implemented data acquisition techniques, improving resolution of data collected for analysis. Addressed and resolved complex issues and delegated tasks to crew.
- Led and managed research & design team of 13 employees and confirmed adherence to updated safety procedures.

2017-08 - 2019-03

Product Development Engineer

Aurolab, Tamil Nadu, India

- Managed documentation and schematics for 7 new projects that were undertaken by research and development team.
- Worked with marketing and service managers to understand customer desires, obtain feedback, and determined project costs, timelines and limiting factors.
- Drove continuous improvement culture, following quality control procedures in engineering, to provide clear product design standards by 20%, improve manufacturability through enhanced documentation, and reduce engineering cycle time by 5%.
- Negotiated with vendors and manufacturers on pricing, services and scheduled shipping windows.
- Provided clear and timely technical data required for design and specification of product, and created designs at minimal costs using high-volume manufacturing processes and careful material selection.
- Identified new ideas, products and/or features that improved customer satisfaction by 30%, reduced costs and kept product line in forefront of industry.
- Suggested enhancements to product design that would improve user experience, and drafted clear technical documentation, detailing product design specifications.
- Traveled to manufacturing facilities to evaluate product creation and point out potential issues.
- Prepared variety of different written communications, reports and documents to ensure smooth operations.
- Used coordination and planning skills to achieve results according to schedule.

Education

2019-07 - 2021-06

Master of Professional Engineering: Biomedical Engineering

University of Technology Sydney - Sydney, NSW

PROJECTS:

Development of Optical Tweezers for High Resolution Cellular Analysis

- Characterised and manipulated a single laser beam to deflect in a 2-dimensional manner using an Acoustic Optic Deflector (AOD) device.
- The system generated can trap small sized cells / particles such as aerosol in the form of user-defined shape or pattern.

Bioengineering Skin Tissue for Therapeutic Applications

- Discussed the ability of fibrin-alginate mix hydrogel for application in 3D

bioprinting a skin tissue.

- Successfully determined the printability of the bioink and evaluated the optimal composition of fibrin-alginate hydrogel and hDFs.
- Cell viability was achieved by capturing images of live cells in the printed tissue.

Cardiac Patch Delivery Instrument: Development in Minimally Invasive Cardiac Surgery

- Design development of a surgical instrument that can facilitate the delivery of 3D bioprinted cardiac patch.
- An overview of a control system was developed to manipulate the surgical instrument to deliver the cardiac patch into the target site on the heart.
- The simulation results demonstrated the potential functioning of the surgical instrument that can facilitate the delivery of cardiac patch.

2013-08 - 2017-12

Bachelor of Technology: Biomedical Engineering

Manipal Institute of Technology - India

PROJECT:

Managerial Planning of Biomedical Equipments and Devices

- Constructed paired comparison matrices using Saaty's 1-9 scales and used Analytical Hierarchical Process to prioritize maintenance of medical equipment in hospital.

ACHIEVEMENT:

- 3rd National Biomedical conference & workshop on calibration and testing of various medical equipments
- Workshop on 4D biomedical ultrasound conducted by NIELT Govt. of India & IEEE

Accomplishments

- Trained all team engineers on laboratory best practices and procedures, assuring that everyone was knowledgeable on key details regarding experiments and projects.
- Monitored and assessed issues that arose in the lab, ensuring immediate resolution that promoted improved processes and saved valuable time.
- Monitored and diagnosed issues with data analysis of Intraocular Lens production, preventing setbacks and enabling the project to continue on without fail.
- Contributed towards filing three patents and one complete specification for intellectual property.
- Published one correspondence in RETINA journal.
- Successfully launched one commercial product. Participated in developing seven projects.
- Worked collaboratively with team from John Hopkins University, Baltimore.
- Co-author for a publication in Indian Journal of Ophthalmology. Collaborative project with Ivey Eye Institute, Ontario Canada.
- Collaborated with team of thirteen postgraduate and undergraduate students in the development of "Surgical Instrument to deliver 3D bioprinted Cardiac Patch" using rapid prototyping and published a manuscript to the journal - Rising

Affiliations

- Engineers Australia
- Biomedical Engineering Society of India | Manipal Chapter

Software

SolidWorks

Blender

MS Office 365

TinkerCAD

Referees

Available on request