

Mekala Anil Siva Kumar

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EDUCATION

University of Pittsburgh, Swanson School of Engineering, Pittsburgh, PA
Master of Science in Bioengineering-Medical product Engineering (MPE)

Dec 2024

MVGR College of Engineering, Andhra Pradesh, India
Bachelor of Technology. in Mechanical Engineering

May 2017

TECHNICAL SKILLS

- SolidWorks || AutoCAD || ANSYS || GD&T || Cura (additive manufacturing) || Arduino IDE || ISO 13485 || DFMA || Design Verification & Validation || DHF (Design history file) || MS Excel, Word, PowerPoint

WORK EXPERIENCE

Kmedika Solutions Pvt. Ltd., Hyderabad, India

Sr Product Design Engineer, R&D -Trauma & Extremities

Apr 2021- June 2023

- Lead for R&D projects with complete ownership of project management activities including project plans, timeline/schedule, task assignment, etc.
- Communicated project progress to higher leadership through daily/weekly/monthly updates.
- Ensured that project issues/risks were effectively communicated to each stakeholder and resolved within the team.
- Guided junior engineers with daily design reviews and providing feedback.

Product Design Engineer, R&D -Trauma & Extremities

Apr 2019- Apr 2021

- Gained in-depth knowledge of Anatomy, surgical approaches, and surgical procedures.
- Developed an understanding of various manufacturing processes like CNC Machining, Injection Molding, Additive Manufacturing, Wire EDM, etc.
- Analyzed competitor products and operations to better understand the market.
- Prepared Design History File (DHF) for an FDA inspection.
- Generated innovative concepts, their 3D models, and 2D drawings using SolidWorks according to AMSE Y14.5M-2009.
- Performed IP searches to ensure the concepts developed didn't clash with any existing designs.
- Performed Tolerance Stack Up analysis on implants and instruments under development to identify the worst case of assembly & functionality.

ENERGY EFFICIENCY SERVICE LIMITED, Vijayawada, India

Graduate Apprentice Trainee

Dec 2017 - Dec 2018

- Worked with the Engineering team to conduct the Energy Audit in Govt. buildings to assess the scope of energy savings.
- Worked with Managers to coordinate periodic meetings with vendors, pump manufacturers & Discom officials.
- Integrated with SAP Module (SAP MM) for Creation of Contracts, Service Entry, Parked Invoice & Invoice Verification
- Projects work under: BEEP (Building Energy Efficiency Programme), E-mobility, AgDSM (Agricultural Demand Side Management)

PROJECTS

Mid Foot Fracture (Kmedika)

- Designed implants and instrumentation for Intramedullary Jones Fracture Fixation.
- Designed a Nitinol washer to create dynamic compression for Jones fracture using screws.
- Designed a Universal clamp for Jones Fracture that can be used single-handedly and helps to visualize implant trajectory and reduce alignment time.

Bicortical Fixation (Kmedika)

- Designed and developed a toggle screw for bicortical fixation, which improves pullout strength and enhances fracture compression.
- Compare the implant with partially cannulated cancellous screw and perform a 4-point bending analysis using ANSYS to optimize the design for better performance.

Ankle Fracture and Fusion (Kmedika)

- Designed and developed low-profile plate implants for Ankle fractures. Designed a Plate Inserter that works with all the plates of this system.
- Guided and Designed Ankle Fusion System Consists of Fusion plates, screws, and respective instruments.
- Designed a Targeting guide for Short talar and Anterior TT plates that precisely places a tibiotalar crossing screw.

Nitinol Staple (Kmedika)

- Designed and developed Staple bone implants, implant insertion mechanism, and instrumentation for Akin procedures for foot bone fusion operations with a minimal amount of surgeon effort.
- Perform a 4-point bending analysis using ANSYS concerning ASTM Testing standards on the implant to determine the worst case and compare it with existing staples in the market. DHF was created for FDA clearance.

CERTIFICATIONS

- **SolidWorks Professional – Mechanical Design** (Credential ID: C-J4TKX6CYFN).
- **SolidWorks Associate – Additive Manufacturing** (Credential ID: C-8T8KCHZYS6).
- **Creo 2.0** – (Credential ID: PTC202-0419).