

Anil Siva Kumar Mekala

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SUMMARY

I am a certified SolidWorks professional with four years of experience in the orthopedic medical device industry. I specialize in designing implants and instruments for Foot and Ankle systems and creating innovative medical devices. My proficiency in CAD tools and attention to detail has helped me convert imaginative concepts into practical solutions that are novel and cost-effective. My flexible, problem-solving, and highly motivated approach can bring tremendous value to any team.

EDUCATION

University Of Pittsburgh, Pittsburgh, PA

May 2025

M.S in Biomedical engineering and Bioengineering - Medical product Engineering (MPE)

MVGR College of Engineering, AP, India

May 2017

Bachelor of Technology in Mechanical Engineering

EXPERIENCE

Senior Product Development Engineer

Apr. 2021 – Jun. 2023

Kmedika Solutions Pvt. Ltd. | Hyderabad, India

- Led multiple **R&D projects** with full ownership of project management activities, resulting in a **20% improvement in project completion efficiency**.
- Developed and implemented **project plans, timelines, and task assignments**, ensuring adherence to milestones and deadlines, resulting in a **15% reduction in project delays**.
- Communicated project progress and milestones to senior leadership through daily/weekly/monthly updates, facilitating informed decision-making and strategic alignment.
- Ensured that project issues/risks were effectively communicated and associated team members for timely resolution.
- **Mentored and guided junior engineers**, improving design quality and productivity through effective feedback and skill development.

Product Development Engineer

Apr. 2021 – Jun. 2023

Kmedika Solutions Pvt. Ltd. | Hyderabad, India

- Gained in-depth knowledge of Anatomy, surgical approaches, and surgical procedures
- Developed an understanding of various manufacturing processes such as CNC Machining, Injection Molding, Additive Manufacturing, and Wire EDM, etc.
- Conducted **competitor analysis and market research**, identifying key market trends that **led to a 20% increase** in new product adoption rates.
- 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.
- Conducted **IP searches** to ensure the uniqueness of product designs, preventing potential legal issues related to patent infringement.
- Performed **Tolerance Stack analysis** on implants and instruments under development to identify the worst-case assembly and functionality scenarios, **reducing assembly errors by 15%**.

SKILLS

Technical: SolidWorks, Ansys, Autocad, Creo, GD&T (Geometric Dimensioning and Tolerancing), DFM, DFA

Prototype & Fabrication: : 3D Printing, Laser Cutting, Rapid Prototype

Programming: Arduino IDE, Python

Quality Management: ISO13485, DHF (Design History File)

Collaboration & Productivity Tools: Microsoft office Suite (Word, Excel, PowerPoint, Outlook), Gantt Chart

PROJECTS

Ankle Fracture and Fusion | *Client: Kognitus LLC, Medline Unite*

- Designed and developed low-profile plate implants for Ankle fractures. Designed a Plate Inserter that works with all the plates in this system.
- Guided and Designed Ankle Fusion System Consisting 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.

Mid Foot Fracture | *Client: Kognitus LLC, Medline Unite*

- Designed implants and instrumentation for Intramedullary Jones Fracture Fixation, utilizing SolidWorks for precise solid modeling.
- 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, helps visualize implant trajectory, and reduces alignment time.

Bicortical Fixation | *Client: Kognitus LLC, Vilex*

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

Nitinol Staple | *Client: Kognitus LLC, Medline Unite*

- 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 finite element 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.

VOLUNTEER EXPERIENCE

Pennsylvania Robotics and Technology Fellowship | *NeuEsse Inc.*

- As part of a four-person team, I collaborated on developing a product roadmap and delivering optimal recommendations for enhancing shelf stability through chemical and biomechanical methods for a local biotech startup (currently under NDA).

X-Projects | *Medical Wire Torque Device*

- At the University of Pittsburgh, I collaborated on a project to design and test a novel wire torque device with two UPMC cardiologists for percutaneous vascular interventions. My role involved conducting literature reviews and IP analysis to ensure product uniqueness. I contributed to human-centered design activities, prototype iterations, and testing phases, working closely with clinicians to bring this invention to life. This experience strengthened my skills in medical device development and interdisciplinary teamwork. (currently under NDA).

CERTIFICATIONS

SolidWorks Professional – *Mechanical Design (Credential ID: C-J4TKX6CYFN)*

SolidWorks Associate – *Additive Manufacturing (Credential ID: C-8T8KCHZYS6)*

SolidWorks Professional – *Advanced Weldments (Credential ID: C-WM49XKTL52)*

SolidWorks Professional – *Advanced Drawing Tools (Credential ID: C-YVKS8XRH69)*

Creo 2.0 – *(Credential ID: PTC202-0419)*

Human Center Design – *Luma Institute*

Product Development and Management Association - *PDMA Certification*