

CHAITANYA GURUNATH KULKARNI

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Design Engineer with master's degree in Mechanical Engineering looking for full-time position & willing to relocate.

EDUCATION

Master of Science, Mechanical Engineering Arizona State University, Tempe, AZ	May 2020
Bachelor of Engineering, Mechanical Engineering University of Pune, India	July 2017

TECHNICAL SKILLS

CAD & CAE: SolidWorks, CATIA V5, AutoCAD, Creo, Pro - E, Autodesk Fusion 360, ANSYS, SolidWorks Simulation, 3DEXPERIENCE
Other Software & Applications: MS Office (Word, Excel, PowerPoint), G Suite, PLM, TeamCenter
Hands-On Experience: Injection Molding, 3D Printing, Sheet Metal, Stamping, Cutting, Drilling, Welding, Machining
Certifications/Training: Geometric Dimensioning & Tolerancing (GD&T), Failure Mode & Effects Analysis (FMEA)

WORK EXPERIENCE

Design Engineer, Goken America, Dublin, OH ● Successfully completed DFM changes in cooling system design and its optimization using SolidWorks. ● Worked on the plastic part design and sheetmetal part design. ● Designed Body in White parts, GSD surfacing, part, assembly, and sheet metal modules extensively using CATIA V5. ● Developed various fixture designs and engineering drawings using Catia V5, SolidWorks, and ASME Y14.5 standards.	Feb'22 – Present
Development Engineer, Zimmer Biomet, Warsaw, IN ● Responsible for maintaining the design & development of medical devices, implants, and packaging. ● Generated over 1200 quality documents in the span of a year by continuously improving the documentation process. ● Worked on various part designs & product specifications, design inputs & interactions, engineering drawings, Bill of Materials (BOM) ● Performed Critical to Quality (CTQ) assessment, Worst-Case Analysis (WCA), Dimensional Analysis & Geometrical Assessment, change management, risk management, verification & validation activities, 3D CAD models of parts & assemblies. ● Directed 20 Design Reviews and coordinated design review meetings for new product implementation. ● Continuous coordination with cross-functional teams like design, quality, R&D, regulatory, and vendors.	Jan'21 – Feb'22
Mechanical Design Engineer, UVFAB Systems, Tempe, AZ Project: Design & Development of Conveyor Belt Surface Disinfection System Using Germicidal Ultraviolet (UV-C) Light ● Developed the system for food industries as per Design for Manufacturability (DFM) & Design for Assembly (DFA). ● Performed the flow & thermal simulations using SolidWorks Simulation, worked on patent writing & part drawings. ● Designed, developed & tested the mechanical components & assemblies from conception to production.	Oct'20 – Jan'21
Design Engineer (Team Lead), Engineering Projects in Community Service (EPICS), Arizona State University, AZ Project: Development of a Low-Cost Battery Module for a Powered Wheelchair (In collab with 'Wheelchair Labs') ● Identified, formulated & produced effective solutions to emerging problems, determined project flow & project management. ● Organized client meetings, worked on make or buy decisions, Lithium-ion cells, modules & different battery pack designs. ● Worked on mechanical designs and drafting, studied ASME Y14.5 standards, 3D CAD modeling & assembly using SolidWorks. ● Carried out structural strength & fatigue tests on the designed model using Finite Element Analysis (FEA).	June'20 – Dec'20
Research Assistant, Neuromuscular Control and Human Robotics Laboratory (NCHRL), Arizona State University, AZ Project: Development of an Autonomous Submersible Robot for Water Quality Inspection. ● Analyzed, optimized & validated the design by proposing new conceptual designs. ● Carried out 3D printing prototype tests to check reliability using Cura software & worked on the waterproofing of the model.	Aug'19 – Dec'19

PATENTS/PUBLICATIONS

A Wearable Soft Robotic Medical Device to Treat Plantar Flexion Contractures in Brain Injuries ● Designed & modeled the device using SolidWorks, 3d printed the parts & built soft actuators using sewing machine & LASER cutting. ● Evaluated overall performance, reliability, safety & removed loopholes using Root Cause Analysis (RCA) ● The DON/DOFF time of the device was below 2 min, which is effective compared to other devices such as splints & serial casts Able to create a total angle displacement of around 22° which covers the normal angle range of PFC which is around 15° ● Published this research on <i>US Patent & Trademark Office & Skysong Innovations.</i>
Design of Amphibian Exploration Rover ● Proposed a unique cost-effective mechanism comprising hybrid wheels for traversing the rover on the ground as well as water ● Designed & modeled hybrid wheels using SolidWorks, carried out Computational Fluid Dynamics (CFD) analysis using ANSYS Fluent ● 3D printed & fabricated all the parts, waterproofed all the components, calculated the efficiency of hybrid wheels around 82% ● Got patent from <i>IP Office, Mumbai, India (Patent No: 201721018524).</i>