

DEEP KOTADIYA

Mechanical Design Engineer - Robotics

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India



SUMMARY

An experienced mechanical design engineer with over three years of experience designing robotics systems and mechanisms for India's first robotic museum in Ahmedabad city, India. With expertise in providing design guidance on tools and mechanical equipment, I am a SolidWorks Certified Professional. In addition to my passion for research and development, my areas of interest include design, robotics, and SPM. Serve as the principal evaluator of team members' designs, exhibiting excellent presentation and analytical skills. Utilize SolidWorks PDM for a 15% increase in productivity in a year. Ensure compliance by paying attention to detail.

EXPERIENCE

Mechanical Design Engineer

Engineering Services International - ESI

05/2019 - current Ahmedabad, IN

Robotics firm specializing in product development and research related to robotics and autonomous drive systems.

- Worked with a team of 3-4 mechanical engineers on multiple projects for 5 clients, including GCSC, which involved designing, reviewing, and analyzing robotic systems.
- Evaluation of design models for fit, form, and function; meticulous practice of safety procedures.
- Analyzed, reviewed and finalized the design of robot implementation, build and deployment automation for 8+ projects.
- Used various tools like Sheet-metal, Weldments, Surface, Simulation, PDM etc. to reach towards the goal of the product development.
- Completed design calculations for 10+ projects in 2 years, including torque calculations for Humanoid robot.
- Individually formulated the design and erection of Robo-cafe, Also applied for invention patent.
- Vendor development and supply chain management, also implemented 5-S for workshop tools management.
- Practical experience in programming humanoid Inmoov robots as well as teaching industrial arms like the UR10, ABB IRB 1200, Dobot magician, etc.
- Completing nearly a dozen projects at ESI, including Robocafe, and optimizing workflow time by 15%

Summer Engineering Intern

FIAT India Automobiles Pvt. Ltd.

05/2018 - 07/2018 Pune, IN

FCA India Automobiles

- Worked on "Development of fixture for manual verification of shim size at C636 gamma build" with a quality team.
- Learned about 6-speed gearbox used in Jeep Compass and TATA Nexon and took part in tear-down quality analysis and testing.
- Responsible for quality check at C636 gamma build of 6-speed manual transmission.

Winter Internship Trainee

Ford Motor Company

01/2018 - 03/2018 Sanand, IN

Ford Sanand Engine Plant

- Assigned a project of "C/1000 Improvement in Panther Dock Audit".
- Learned and understood the build of 3 engines including the Panther engine, and its various components also gained the knowledge of dock audits.
- Learnt about lean production tools like 6-Panel, 6-M, 5-Whys, Root-cause analysis, Fish bone diagram, Control plan, CTQ tree, Pareto charts, etc.

SKILLS

Solidworks 2021

AutoCAD

ANSYS

Surfacing

Fusion 360

3D Printing

FEA

ROS

Python

Robotics

SW PDM

Project management

Sheetmetal

CAD/CFD/CAE

Design for Manufacturability

Embedded C

Control systems

Concept Design document

Team leadership

Supply-Chain management

R&D

Dynamic Simulations

Solid & Parametric Modeling

Weldments

PROJECTS

RoboCafe

03/2020 - 05/2022

A fully automatic robotic kitchen. Scheduling, cooking and serving of food will be done by robots.

- I have formulated the design and erection of entire robocafe project.
- Designed of Plating rack, Robochef rack, 7th Axis, teaching of UR10.
- Designed Jaws for SMC gripper, rollers and gravity conveyor for handling of PANs.

Humanoid

07/2021 - Ongoing

A humanoid robot just like Pepper for research purpose and product development.

- Performed design and joint torque calculation, Design of hip and neck movement with SCA actuators.

Robosoccer

08/2019 - 02/2021

A group of autonomous robots playing soccer game with dribbles and kicker.

- Designed kicker and dribbler mechanism for dribbling of ball, also designed outer shell by using SW surfacing.

EDUCATION

B. Tech. Mechanical Engineering - Design
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY
📅 2015 - 2019 📍 Anand, IN

CGPA

8.08 /
10

H.S.C. - Physics, Chemistry, Mathematics
P P Savani Vidyalyaya
📅 2013 - 2015 📍 Surat, IN

%
78.5 /
100

CERTIFICATION

ASSOCIATE - Mechanical Design

Certificate ID: C-9E49XVA36R.

Issued

By: Kishor SARVADE, SolidWorks Corporation (2018)

ASSOCIATE - Additive Manufacturing

Certificate ID: C-AHTAJ338HN

Issued By: VirtualTester Online, Tangix Design & Development AB (2019)

ASSOCIATE - Sustainability

Certificate ID: C-B3PWK7T56Q

Issued By: VirtualTester Online, Tangix Design & Development AB (2019)

ACHIEVEMENTS



Solidworks PDM

At ESI, I had set up MySQL database, PDM server and client pcs for product data management and project tracking. hence, optimized workflow time by 15%.



Cleared CSWA with 240 Score

I had clear one of the SW Associate - CSWA exam with full marks. Also cleared Associate - Additive Manufacturing and Associate - Sustainability with good score.



6-Panel Project

At FORD, I successfully completed my 6-Sigma Project and reduce C/1000 from 570/1000 to 50/1000 in 2 months of a time period.

LANGUAGES

English

Proficient



Hindi

Proficient



Gujarati

Native



PROJECTS

Painter Robot

📅 01/2020 - 10/2020

Dobot magician and cassette mechanism, together can sketch a photo on canvas.

- Designed fully automatic cassette mechanism for stacking the canvas.

3D RoboScanner

📅 06/2019 - 02/2020

Scanner can make 3D STL of your bust for 3D printing

- Designed industrial turntable by using Weldment structure and V belt pulley mechanism.
- Designed timing belt and pulley drive for Xbox 360 Kinect movement.

Wall Climbing Robot - Impeller

📅 05/2021 - 06/2021

One of the wall climbing robot using impeller technology.

- Inspired from open-source design, made some changes and improvement.

Trumpet Playing Robot

📅 07/2019 - 03/2020

A humanoid robot with 6-DOF who plays Trumpet.

- Modified open-source InMoov robot, to playing the trumpet with rhythm.
- Used rack-pinion mechanism for trumpet design

INDUSTRY EXPERTISE

Design and Development



Project mangmnet



Solidworks CAD/CAM/CAE



Training and Guiding skills



Leadership



STRENGTHS



Flexible, Confident, Leader, Quick learner, Strategic, Positive.