K. Vaikunth Keshav

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Education

M.S. in Mechanical Engineering, University of Colorado Boulder **Expected Graduation:** May 2026
Cumulative GPA: 3.83/4.0
Relevant Courses: Design for Manufacturability, Mechatronics-I
Advanced Product Design, Introduction to Robotics, Computational Fluid Dynamics

B.E. in Mechanical Engineering, Minor in Finance, BITS Pilani-Dubai Campus, UAE **Graduated:** 2021
GPA: 7.36/10.0

Technical Skills

Mechanical Engineering: Mechanical Design and Modeling, P&ID development, CAD, DFM, DFA, GD&T
3D CAD Design Software: Solid Edge, SolidWorks, CATIA, AutoCAD
FEA Analysis Tools: Ansys, Abaqus
Programming: Python, C++
Productivity Software: Microsoft Excel, Microsoft Word

Professional Experience

Engineer – Mechanical Design June 2022 – Sep 2023
Hamsa Environmental Solutions Private Limited, Tamil Nadu, India

- Designed pressure vessels, heat exchangers, and wiped film evaporators in AutoCAD, optimizing the manufacturing process and ensuring compliance with ANSI B16 standards.
- Developed equipment using Solid Edge and AutoCAD and assisted in developing P&ID drafts using AutoCAD for used oil re-refinery, lube polishing, solvent extraction, and other chemical waste treatment systems.
- Utilized CADWorx, Solid Edge, and Ansys for 3D modeling, assembly, and analysis, optimizing the manufacturing process and significantly reducing errors.

Intern – Mechanical Design Jan 2021 – July 2021
Subzero Motorsport, Dubai, UAE

- Assisted with vehicle ECU integration, diagnostics, and supported CAE software usage.

Intern – Mechanical Design June 2019 – Aug 2019
Al Al Ashwaq Building Maintenance, Electrical Contracting and Plumbing LLC, Dubai, UAE

- Designed 2D layouts for electrical, plumbing, HVAC, and firefighting systems in AutoCAD.

Projects

Optimizing Heat Transfer in Heat Sink using CFD, University of Colorado Boulder Aug 2024 - Dec 2024
Investigated optimal fin configuration for passive heat sinks using computational fluid dynamics. Simulated natural convection in three fin array configurations, determining that 10-fin design achieved 62% higher heat transfer than 6-fin and 18% higher than 13-fin configurations.

Mario Kart Balloon Battle, University of Colorado Boulder Aug 2024 - Dec 2024
Collaborated to engineer an autonomous robot with mecanum wheels, sensors, and a PixyCam for object detection in a Mario Kart Balloon Battle.

4-DOF Robotic Arm with Gripper, University of Colorado Boulder Aug 2024 - Dec 2024
Simulated a robotic arm with a gripper, utilizing forward kinematics for motion control in Solidworks.

Reverse Engineering of a Handheld Wireless Vacuum, University of Colorado Boulder Aug 2024 - Dec 2024
Collaborated to reverse-engineer and redesign the vacuum for manufacturability, reducing part count by 46%.

Chocolate Winnowing Machine Design, University of Colorado Boulder Aug 2024 - Dec 2024
Worked as a team to develop a novel design for a cacao winnowing machine with an integrated vacuum to improve efficiency, reducing both the part count and cost to $441.80.

Incremental Sheet Metal Forming of Materials, BITS Pilani – Dubai Campus Jan 2019 – Jan 2021
Simulated ISFC processes using Abaqus to evaluate CNC feasibility.

Certifications

- **Online Python course (Udemy, ongoing)**
- **Product Design (SolidWorks, AutoCAD, CADD Centre).** June 2018 - Dec 2020

Leadership and Personal Development

- **Participated in 'Kaizen Robotics'programs (Beginner / Advanced), IIT Madras** Jun 2017 , Jun 2018
- **Member, American Society of Mechanical Engineers** Aug 2019 - Aug 2021
- **Co-Founder and Vice President, Wall Street Club, BITS Pilani – Dubai Campus** Aug 2020 - July 2021
- **Practiced Kalaripayattu, Indian martial art** Aug 2020 - Present