Rishi Patel

Frankfort, IL | (443)-966-2553
rishipatel264@gmail.com | linkedin.com/in/rishipatel264 | https://rpatel264.github.io/portfolio/

EDUCATION

B.S in Mechanical Engineering, University of Illinois Urbana-Champaign
May 2024

TECHNICAL SKILLS

SolidWorks, Fusion 360, AutoCAD, Siemens NX, 3D Printing, Machining, GD&T, Arduino, Python, Power BI

WORK EXPERIENCE

International Motors **Lisle, IL**
Mechanical Engineer *September 2024 – Current*

- Designed a modular tractor-trailer assembly in Siemens NX (200+ features), cutting model-build time by 15% and supporting 3 configurable variants
- Proposed novel modularization concepts, including an air horn redesign, streamlining manufacturing and reducing assembly time by 10%
- Coordinated with multidisciplinary teams to coordinate the logistics for 15+ truck models across regions to support benchmarking efforts, informing up to 30% of the current in-house design improvements

Phillips 66 Internship **Roxana, IL**
Midstream Refining Engineer *May 2023 – August 2023*

- Modeled a reciprocating compressor in SolidWorks and conducted a FEA across 10 load cases, identifying 2 potential failure modes and reducing unplanned outages by 20%
- Developed proximity probe calibration curves comparing 4140 vs. 4340 Steel, achieving <1% error, therefore enabling 24/7 vibration monitoring from a single probe model saving up to $15K in cost
- Analyzed compressor C4007 temperature trends, validating temperature as a reliable indicator of machine health alongside vibration monitoring

Abbott Research Park **Champaign, IL**
Part time Internship *September 2022 - May 2023*

- Developed Power BI dashboards for MBR Project Reviews to streamline data entry processes allowing engineers to input their findings seamlessly
- Used iRCE system to support mapping meetings and project improvements, leading to smoother goal tracking and project reporting
- Created job aids for engineers to efficiently navigate the updated iRCE system so that updating data, schematics, drawings, analysis and programs are more intuitive

RELEVANT PROJECTS & RESEARCH

Two-Speed Transmission Design **Fall 2024**

- Designed and built a 2 speed + idle transmission through 3D printing and machining within a certain budget
- Utilized dog boxes, bevel gears, heat inserts, and other custom hardware to overcome mechanical challenges
- Determined proper gear ratios, material strength and load limits to optimize the machine

Walking Gait Modeling **Spring 2023**

- Analyzed sloped vs. level walking gaits in OpenSim, quantifying a 12% increase in knee-joint torque on 10° inclines
- Built and ran custom musculoskeletal simulations for 3 walking gaits, analyzing torque variations across terrains
- Generated data points using OpenSim to graph the different walking gaits and generate conclusions on force analysis

Biomechanical Analysis of Shoulder Strain **Spring 2024**

- Performed medical scans on the shoulders of wheelchair athletes using different bio-imaging technologies
- Created a 3D model of different structures of the shoulder using Amira software from the medical scans
- Evaluated the 3D models to draw conclusions on degree of strain on the shoulders of wheelchair athletes

ADDITIONAL ACTIVITIES

Finance Chair for Nonprofit Raas All-Stars **Spring 2024-Current**

- Manage $100k+ annual budget and lead fundraising for Raas All-Stars, a national dance competition
- Retain non-profit status through proper tax documentation and raise sponsorship revenue by 25% YoY