# NIKHIL JOSHI

Phoenix, AZ | 602-639-2988 | LinkedIn | joshi.nikhil15@outlook.com | Portfolio

## WORK EXPERIENCE

**Jupiter Research LLC.** **Phoenix, AZ**
*Jr. Product Development Engineer* *August 2022 - Present*

- Spearheaded the development and implementation of innovative manufacturing processes for consumer vaporization hardware, driving the creation and refinement of testing procedures and product specifications, and employing initiative, originality, and ingenuity.
- Undertook extensive product validation and usability testing, refining designs to enhance performance, structural integrity, thermal management, and battery life; executed design verification testing and validation, ensuring all SOPs, ECOs, ECNs were up-to-date, and created essential project documents such as BOMs, Design Specifications, and Design Descriptions.
- Improved manufacturing efficiency by leveraging lean manufacturing principles to design and fabricate customized fixtures, optimizing tooling, and reducing material use and print time by ~20-30%; experienced in working with certifications such as FDA, ISO 13485 alongside quality engineers.
- Demonstrated excellent communication, presentation, interpersonal, and organizational skills, effectively communicating project status and technical information to stakeholders (both local and international) of varying technical understanding.

## LEADERSHIP EXPERIENCE

**Arizona State University** **Tempe, AZ**
*Graduate Student Assistant* *August 2021 – May 2022*

- Facilitated office hours to provide support and clarification regarding course concepts and homework assignments for courses in engineering and non-engineering (Supply Chain & Project Management) courses of 100+ students.
- Assisted students during in-class activities to reinforce understanding and promote active learning.

## ACADEMIC EXPERIENCE

**Analysis of internal, external, and multiphase flow with heat transfer**

- Generated CAD models with SolidWorks and ANSYS Design Modeler.
- Employed both laminar and turbulent flow models to analyze and compare key parameters, Vorticity, and Stream function.

**Optimizing the brew of coffee through factor analysis and DoE principles**

- Designed and conducted a full factorial experiment $2^3$ to assess acidity variations in freshly brewed coffee, using a pH meter for measurements and managing data with Microsoft Excel, while performing in-depth analysis (ANOVA) using JMP Pro statistical software.
- Investigated two-way and three-way interactions to evaluate the significance of critical variables, enhancing the understanding of their impact on coffee acidity.

**Demonstration of stress concentration using Finite element analysis**

- Designed stress concentration transformation device using SOLIDWORKS for modeling, ANSYS Structural, and MATLAB for analysis, and laser cutting for fabrication of a PMMA sample..
- Conducted experimental testing of device functionality with a vice, demonstrating proficiency in FEA, CAD, and prototyping while comparing the results found to be consistent with 0.8% error

**Liquid-Desiccant Dehumidification for Air Conditioning**

- Conducted a comprehensive study on liquid-desiccant dehumidification to optimize humidity control and air temperature reduction, using response surface methodology to focus on variables such as inlet air temperature and relative humidity.
- Developed theoretical models and performed experimental analysis, achieving significant reductions in air temperature (35°C to 25°C) and humidity (0.021 kg/kg to 0.0055 kg/kg). Proposed hybrid systems for improved stability and performance in varied climates. Developed regression models to predict system efficiency, achieving a COP range of 1.44 to 2.4, demonstrating potential for energy savings and improved environmental impact.

## EDUCATION

**Arizona State University** **Tempe, AZ**
*Master of Science, Mechanical Engineering (GPA: 3.3)*

**Pandit Deendayal Energy University** **Gujarat, India**
*Bachelor of Technology, Mechanical Engineering (GPA: 3.5)*

## SKILLS & INTERESTS

SolidWorks, PTC Creo, Ansys, Abaqus, COMSOL, Nx, SimScale, Teamcenter | GD&T, DFM/DFA, FMEA, RCA | DOE, Minitab, JMP | Excel, MATLAB, Python, SQL, PowerBI, Acumatica ERP | 3D Printing, Lean Six Sigma Yellow Belt