Janhavi Gaikwad

Ithaca, NY (open to relocate) | https://www.linkedin.com/in/janhavi-gaikwad-a200a0125/ | 607-327-1021 | janhavi.prof@gmail.com | Portfolio

EDUCATION

Cornell University — **Ithaca, NY**
MEng in Systems Engineering — *Graduation Date: May 2026*
- Relevant Coursework: Model Based Systems Engineering, Feedback Control System, Project Management

Priyadarshini College of Engineering — **Nagpur, India**
B.E in Aeronautical Engineering — *Graduation Date: November 2020*
- Relevant Coursework: Computational Fluid Dynamics, Aerodynamics, Propulsion, C,Structures

WORK EXPERIENCE

Honeywell Technology Solutions — **Bengaluru, India**
Mechanical Design Engineer — *Jan 2024 – July 2025*
- **Delivered 300+ hours of engineering productivity gains** by designing, implementing, and validating **0D engine performance algorithms in C++ (OOP),** incorporating gas property corrections, trap efficiency, and scalar logic across **fan, compressor, turbine, and combustor modules**.
- **Reduced simulation setup time by ~5 minutes per run** by enabling **UI-based access and visualization of 3D performance map data**, significantly improving modeling efficiency and usability.
- **Maintained feature accuracy within 0.05% tolerance** by validating new turbojet and turbofan features in NexSys against FAST legacy models, supporting efficient and reliable design assessments.
- **Consistently achieved more than 95% of say do ratio in global agile environment** through **disciplined planning** , ensuring reliable delivery of **high quality** modeling features.
- **Enhanced team wide efficiency and knowledge retention** by authoring monthly **Kaizen documentation**, recording micro optimizations, shortcuts and modeling insights , creating a continuously evolving reference.
- **Supported cross-functional innovation** teams by **modifying existing engine performance models for different configurations**, contributing analytical insight to efficiency-focused system studies.
- **Developed a POC ML system for electric UAM route optimization,** enabling early-stage studies projected to **reduce fuel consumption by ~10%.**
- **Created a POC ML model to predict gas turbine surge and stall**, contributing to operability risk assessment for next-generation propulsion systems.

Entuple Technologies Ltd., — **Pune, India**
CFD Application Engineer(ANSYS) — *Aug 2022 - Jan 2024*
- **Enabled ANSYS Fluent adoption across aerospace, automotive, and research clients** by providing training, problem-solving, and application support for **50+ customers**, improving simulation reliability and accuracy.
- **Improved simulation proficiency by ~40% for 500+ engineers** by delivering **20+ high-impact technical training** programs, achieving an average trainee satisfaction score of **4.8/5** and reducing modeling errors by **25%**.
- **Accelerated customer adoption of ANSYS Fluent** by **developing 10+ POC** CFD models for different cases like multiphase flows, pollutant dispersion, chemical reaction modeling, and moving/dynamic meshes, enabling early validation of complex simulations.
- **Resolved complex CFD challenges for strategic clients**, providing simulation best practices and shortcuts, model setup guidance, and validation support, resulting in **~20% faster model turnaround** and higher confidence in simulation results.
- **Enhanced visibility and promoted adoption** by delivering a keynote **at ICPHD'23 (IIT Guwahati),** showcasing applications of ANSYS simulation tools for green energy and sustainability-focused engineering challenges, reaching **100+ attendees**.

Hindustan Aeronautics Ltd., — **Nashik, India**
Apprentice Trainee — *Aug 2021 - Aug 2022*
- **Achieved <1% error in lift and drag predictions under operational conditions** by implementing a **MATLAB-based system identification framework** on flight data recorder (FDR) data.
- **Assessed and identified the most efficient meshing method** for complex aircraft geometries by conducting a comparative study across multiple tools and techniques, evaluating both solution accuracy and meshing time to optimize CFD workflow
- **Enabled comparative aerodynamic analysis** by performing CFD simulations of aircraft and airfoil geometries using ANSYS and CFD++, supporting design validation and performance assessment.
- **Promoted IPR knowledge and compliance** by conducting a lecture on IPR awareness as a faculty at HAL, supporting the organization's innovation and research initiatives.

Indian Institute of Technology Madras — **Chennai, India**

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Summer Research fellow *May 2019 - July 2019*

- **Significantly enhanced CFD workflow efficiency** by developing an optimized **FORTRAN preprocessing algorithm**, reducing computation time for 600,000 elements **from 50–60 minutes to 1–2 minutes**

ACADEMIC PROJECTS

MBSE Project : Solar aware route optimizer (Link) *Dec 2025*

- **Delivered a user-centered system architecture by translating 6 prioritized customer needs into measurable requirements**, using Customer Affinity Analysis and Customer Value Proposition (CVP) to define performance thresholds and design priorities
- **Established end-to-end operational clarity** by modeling realistic system scenarios, developing Operational Description Threads (ODTs), annotated concept sketches, and context diagrams to define system boundaries, interfaces, and data flows
- Reduced requirements ambiguity by formalizing system behavior early in the design lifecycle, creating SysML use case, activity, sequence, and state diagrams to capture user interactions and internal logic
- **Improved design decision efficiency by 20%** through structured trade and risk analysis, applying decision matrices, AHP, QFD, FMEA, and fault tree analysis to evaluate architectural alternatives and identify high-risk failure modes
- **Ensured verification readiness and traceability** across the system lifecycle, deriving originating and derived requirements and mapping them to test strategies using SysML requirements diagrams and a Verification Cross Reference Matrix (VCRM)

Inverted Pendulum Control Design (LinkTime LinkFreq) *Dec 2025*

- **Designed, implemented, and experimentally validated a controller for an inverted pendulum system** in both time and frequency domains, ensuring stability and achieving required **disturbance rejection and settling time performance**.

Frequency-Domain SISO Turbine Control (Link) *Dec 2025*

- **Designed a frequency-domain SISO controller in MATLAB** for an academic turbine system project, **minimizing the effect of inlet flow disturbances by adjusting spool speed** while maintaining reference tracking and system stability.

Project Management Plan for a Vertical Farming Enterprise (Link) *Dec 2025*

- **Created a comprehensive project management plan** for a vertical farming company, including resource planning, risk assessment, and Gantt charts, enabling streamlined project execution.

LEADERSHIP EXPERIENCE OR HACKATHONS/COMPETITIONS

International Council on Systems Engineering- Student Chapter (INCOSE) **Ithaca, NY**

Vice President *Sep 2025 – Present*

- **Improved usability of the XRP Robo documentation** by facilitating modifications to existing materials, making them more accessible and user-friendly.
- **Enhanced campus visibility of INCOSE** by organizing **events and activities** to engage students and promote the organization.

Rotaract Club of PCE **Nagpur, India**

Joint Secretary *Aug 2018 – July 2019*

- **Fostered community engagement and social responsibility** by leading and coordinating social initiatives, including a **blind school visit and a traffic awareness campaign**.
- **Reduced environmental impact during the festival season** by organizing a cleanliness drive, managing the collection and proper disposal of **50 kg of organic waste** to prevent pollution of local lakes.

3 MAH ENG National Cadet Corps **Nagpur, India**

Sergent *Oct 2016 – Oct 2018*

- **Improved coordination and participation** by managing activities for a **40-member** Women's Wing.
- **Supported smooth conduct of a 10-day camp for 250 students** through planning and on-ground coordination.
- **Assisted in planning and executing a felicitation event** to recognize camp participants and contributors.