

ASHRITH ADEPU

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EDUCATION

University at Buffalo - Buffalo, NY

MSc-Mechanical Engineering

Indian Institute of Technology Dharwad - India

BTech-Mechanical Engineering

TECHNICAL SKILLS

Languages: Python, **MATLAB**, C++, Java

Certifications: Certified Lean Six Sigma Green Belt

CAD Softwares: **SolidWorks**, CATIA, Creo, Siemens NX, **AutoCAD**, Fusion 360

CAE Softwares: **Simulink**, **ANSYS**, ANSYS Fluent, Abaqus, LabVIEW, Minitab

Domain: Control Systems, HVAC, Design for Manufacturability, Mechanical Systems Optimization, Data Center Infrastructure, Mechanical System Design, Preventative Maintenance, Operational Efficiency Root Cause Analysis

EXPERIENCE

Mechanical Field Engineer at *Amazon Web Services, Hermiston, OR*

Feb 2025 – Mar 2025

- Conducted on-site assessments, commissioning, and **root cause analysis** of critical HVAC systems, including CRAC units, chillers, pumps, and cooling towers, **ensuring high system uptime** and operational reliability.
- Partnered with cross-functional teams from design, construction, and operations to validate mechanical system designs, resolve system failures, and update engineering documentation such as SOPs, MOPs, and redlines.
- Ensured adherence to high engineering standards by applying ASHRAE and NFPA codes while supporting multiple global data center projects under tight timelines.

Research Assistant at *University at Buffalo, Buffalo, NY*

Aug 2022 – Dec 2024

- Optimized Vestas V110/V120 turbines at Maple Ridge & High Sheldon farms, achieving **10% more power**, 12% load reduction, and **12% cost savings**.
- Built high-fidelity MATLAB/Simulink models and applied **SINDy for dynamic behavior analysis** under real-world conditions.
- Designed adaptive control algorithms for blade pitch/yaw and performed SCADA-based torque optimization.
- Validated solutions with Vestas engineers using operational data to ensure scalability across turbine models.

Process Modelling Engineer at *Decibels Labs, Bangalore, India*

Jun 2020 – Jul 2021

- Modeled and simulated 6 EV powertrain components including motor, transmission, battery, and BMS for vehicles such as **Ola S1 Pro**, **Ather 450** and Tesla Model 3 using MATLAB and Simulink.
- Designed and implemented a passive thermal vent system for the Ola Electric S1 Pro, improving battery cooling efficiency and extending battery **lifespan by 1.3x**.
- Conducted high-fidelity simulations and drive cycle customization based on Indian traffic conditions, achieving a **10% improvement** in overall energy efficiency.
- Collaborated with cross-functional teams to integrate and optimize subsystems, resulting in a **12% reduction** in structural loads and enhanced production readiness.

TECHNICAL PROJECTS

HVAC Control System Optimization Project

Control Systems Engineer, "HVAC" Course Project, University at Buffalo

- Engineered adaptive HVAC control algorithms using MATLAB and Simulink, boosting system responsiveness by **25%** and efficiency by **12%** through employing predictive control strategies.
- Performed real-time simulations and optimized system performance under varying load conditions, **ensuring stable operations, reducing downtime by 15%**, and improving system resilience.
- Introduced dynamic feedback loops, using sensors to adjust settings based on occupancy, leading to **significant energy savings** and **consistent climate control**.

Defect Reduction and Quality Enhancement Project

Industrial Engineer, Rich Products Corp, "Lean Enterprise and Applications" Course Project, Buffalo, NY

- Led a Lean Six Sigma project, reducing production defects by **20%** through strategic process enhancements, focusing on **waste reduction** and **process streamlining**.
- Introduced enhanced quality control standards that boosted product compliance by **20%**, while simultaneously improving **operational transparency** and **traceability** across the production process.
- Collaborated with cross-functional teams, driving a **25% improvement** in production efficiency by optimizing workflows and fostering stronger stakeholder engagement.