ANEESH LOTCHER NAGESH

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EDUCATION

MS in Aerospace and Mechanical Engineering, GPA 3.6 **January 2018 – December 2019**
University of Southern California

BE in Mechanical Engineering, GPA 3.7 **August 2013 – June 2017**
Visveswaraya Technological University

Selected Coursework: Mechanical Design, Basic and Advanced Thermodynamic, Advanced Combustion Theory, Computer Aided Design, Design of Experiments, Product Development, FEA, DFMA, GD&T, Quality Management, Six Sigma (Yellow Belt-TUMx), ISO 13485

PROFESSIONAL EXPERIENCE

MANUFACTURING DESIGN AND PROCESS ENGINEER | GMP PROS | GSK PHARMACEUTICALS **JULY 2020 – PRESENT**

- Investigation of root cause for manufacturing and packaging process variance and providing multiple CAPA measures
- Performing process improvement, continuous improvement and supporting SIP activities using techniques of Six Sigma, Lean Manufacturing, SPC
- Writing detailed technical reports for Standard Operating Procedures (SOP) and executing validation processes (IQ/OQ/PQ)

RESEARCH INTERN | SPACE ENGINEERING RESEARCH INSTITUTE | ISI USC | LOCKHEED MARTIN SPONSORED **MAY 2020 - PRESENT**
Design and development of 6U CubeSat for planetary imagining – Launch Window 2022

- Designing for space compliance, manufacturability and assembly of 2 6U sun-synchronous CubeSat planned to fly tandem with laser cross-link
- Designing chassis, packaging components for additive manufacturing
- Thermal and Vibrational analysis shall be performed in accordance with NASA Standards

MECHANICAL DESIGN ENGINEERING INTERN | DRIVE SYSTEMS | TESLA **SEPTEMBER 2019 – DECMEBER 2019**

- Designed and fabricated test stand to characterize different heat exchangers (prototyping to manufacturing) and to validate effectiveness of heat-exchanger design. Test rig was built in accordance with **ASME Y14.5** and **GD&T** standards (**Zero material BOM cost** (scrap used))
- Formulated failure criterion for of Model 3 drive train resolver by adapting technique of **root cause analysis**, reliability testing, **SPC**
- Designed, fabricated and prototyped a test stand for performance mapping of different cooling systems of stator (Model 3 and Semi Truck)
- Modified design (Design Change) of oil pump housing for automobile drive system (**high volume manufacturing**) to increase life cycle reliability and reduce assembly time in manufacturing line

MECHANICAL ENGINEERING INTERN | INTERIOR SYSTEMS | COLLINS AEROSPACE **MAY 2019 – AUGUST 2019**

- Modified design of recalled door handle by performing vibrational analysis to record power spectrum and reduce rattling effect (2 times)
- Formulated Root Cause for failure, CAPA (HALT, reliability, quality control) of thermistor along with Supplier Corrective Action Request (SCAR)
- Prepared SOP for First Article Inspection for new supplier evaluation and evaluate supplier`s profile, capability and performance
- Conducted Material Review Board (MRB) meetings to determine non-conforming parts and report corrective actions to supplier with SCAR

RESEARCH ASSISTANT | MICRO-COMBUSTION LABORATORY | USC **AUGUST 2018 – MAY 2019**
Development of **combustion propelled sub-gram, autonomous flapping-wing flyers** (Butterfly)

- Developing new combustion driven shape memory alloy (SMA) to propel flapping action of flyers
- Validated and simulated detailed surface combustion mechanism (Deutschmann - formulation) for hydrogen using Cantera and Ansys
- Designed and installed hardware (testing equipment's) and fixtures (bench and clipper fixtures) to conduct combustion experiments

ACADEMIC PROJECTS

- **Quality Management (ISO 9001:2008):** Drafted **quality manual** from product ideation to product realization for a small business company, comprising of business plan, BOM, Manufacturing plan, Assembly instructions, QFD, Process maps, Validation test, FMEA, PFMEA
- **Response Surface Methodology (Regression Analysis) –** Statistical analysis (Minitab) was performed to minimise response of 6 independent predictor variables. Setting was recommended based on the results obtained by ANOVA, ridge analysis, distribution of fit and error
- **Computation of Reacting Flow –** computational study was performed using Matlab, Python and Cantera to understand the behaviour of 1D unstead advection-diffusion-reaction of reacting flows. Upwind, downwind and central differencing CFL techniques was used to resolve the flow
- **Mini FSAE:** Designed, analyzed (SolidWorks, Ansys) and manufactured racing Go-Kart for National Level racing competition. Performed duties of technical lead, recruiter (125 students) and mentor of sponsorship team (raised $10000). Team was awarded Best Sales Presentation

SKILLS AND LEADERSHIP

Software: Matlab, Python, SolidWorks, Catia, Ansys Fluent, NX Cad, Minitab, Labview, OptiStruct, Hypermesh, Cantera, FlowTherm

Leadership And Awards

- **Graduate Career Ambassador** for **Viterbi School of Engineering, USC**
  Represent academic division of Viterbi School and connect development opportunities between students, faculty and employers
  Organize info-sessions, tech talk, coffee-chats and represent USC to recruiters
- **Vice President**, **Association of Indian Students (AIS)** at **University of Southern California**
  Spearhead, supervise and manage executive board members, events, discipline of organization (1000+) and proxy duties of President
- **Awarded gold Medal for Best Outgoing Student** during senior year for overall performance