

NAME

#2672, Hassan Dist. -573103, Karnataka, India
+91 8867XXXXX, [REDACTED]049@gmail.com

OBJECTIVE

An ambitious and dedicated undergraduate in Mechanical engineering with specialization in Aerospace domain coupled with a phenomenal academic record. I would graduate in June 2019 and looking forward to a challenging and rewarding career with the aid of a Master's degree in Aerospace domain. I am confident that I also hold an essential research experience with a strong analytical and practical knowledge that would help to be a valuable asset to your university.

ACADEMIC QUALIFICATIONS

PES University, Bengaluru, India 2015 - Present

- Bachelor's degree in **Mechanical Engineering** with a CGPA of **9.22/10** up to a 7th semester.
- Specialization in **Aerospace** domain with relevant coursework on Engineering Thermodynamics, Mechanics of Fluids, Principles of Energy Conversion, Aerospace Structures, Principles of Flight, Heat Transfer, Introduction to Gas Dynamics, Turbomachines, Finite Element Methods, Aircraft Propulsion and Introduction to Aerodynamics.
- Honours and Awards: Stands 8th in the class of 170 students with Distinction, recipient of Prof. CNR Rao Merit Scholarship award (Top 20% of the class) consistently in all seven semesters and secured the highest SGPA of the batch in 5th (**9.96/10**) and 7th (**10/10**) semesters.

Sri Chaitanya Junior Kalashala, Hyderabad, India 2013-2015

- Graduated with **96.7%** and was placed among the toppers of the batch.
- Secured the highest score of the batch in International Maths Olympiad.

Sri Sathya Sai Vidya Kendra, Chickballapur, Karnataka, India 2003-2013

- Graduated with CGPA of **9.4/10** distinction.
- Awarded medals for various sports at Inter School Competition and was awarded as the '**Champion**' of the batch in the school annual sports meet.

RESEARCH EXPERIENCE AND PUBLICATIONS

Research Assistant, PES University, Bengaluru, India
August 2018

April 2018 -

Worked in the field of **Vibration** under Dr C V Chandrashekhara on the defective simple structures extensively using MATLAB software analytically, then simulated using ANSYS Modal analysis and finally validated results using Siemens LMS TestLab software (Impact Module). With the help of the results obtained, we could publish three conference papers.

- Published a paper titled "**Effective Formulation of Stiffness for Predicting Natural Frequency of Cracked Beams**" at 33rd International Conference on Vibro engineering in Zittau, Germany. The paper establishes a new formulation to determine the dynamic characteristics of a cracked beam with an in-depth analysis to understand the effectiveness of this approach. Present formulation considers the shift in the neutral axis of the cracked beam-element.
- Published a paper titled "**Mode based Frequency Behaviour of a Cracked Beams**" at 33rd International Conference on Vibro engineering in Zittau, Germany. This paper compares mathematical and simulation analysis of cracked beam and the dynamic behaviour with respect to mode shape and cracks position.
- Published a paper titled "**An Effective and Simple Approach to Analyse the Dynamic Characteristics of Cracked Beams**" at 19th ISME Conference on Advances in Mechanical Engineering in NIT Jalandhar, India. This paper reports an effective and simple stiffness matrix to model the cracked-beam for finite element analysis. Results are demonstrated for two lengths of a beam at a different location and various depths of crack and also validated the results with both simulation and experimental approaches.

PROJECTS

2D-Flow Analysis across a Strut placed in Supersonic Flow inside a Duct Feb 2018 - April 2018

- Analysed the formation of different types of shocks due to the geometry of the duct and the effect of strut across the flow.
- Observed the effect of Boundary Layer near the walls of the duct and was able to qualitatively comment on the flow properties with the help of Mach and Pressure contours using Ansys Fluent module.

2D-Combustion Analysis in a Supersonic Flow inside a Duct August 2018 – November 2018

- Studied the effect of Combustion by introducing hydrogen fuel in the flow behind the strut placed across the flow in the duct.
- Fuel inlet pressure was calculated analytically by constraining equivalence ratio.
- Was able to visualize the effect of turbulence in the mixing of fuel and air.
- Conclusions were made which would result in effective combustion with minimum stagnation pressure loss.

Analytical Study of NACA 4-digit Aerofoil models August 2018 - November 2018

- Studied the effect of Mean Camber line equation on different NACA 4-digit aerofoil models.
- Various 3D plots were drawn varying maximum camber and the position of maximum camber with a coefficient of lift, moment and angle of attack at zero lift using MATLAB code.
- Observations were made based on the limiting range of maximum camber and the position of maximum camber.

Analysis and Control of Flow-field in a Dual Mode Ramjet engine January 2019 – Present

- As a part of the final year project, it includes validation of the combustion model with the well-established experimental results from the journal paper.
- Then implementing flow control techniques to avoid the flow separation due to combustion.

ADDITIONAL SKILLS AND INTERESTS

Software Tools

- MATLAB
- ANSYS (Modal and Fluent modules)
- Solid Edge
- Sci-lab
- SolidWorks
- Python
- C coding language
- LMS (Impact module)

Languages

- English (IELTS – 7.5/9.0)
- French (A1 certificate holder)
- Kannada (mother tongue)
- Telugu (conversational)
- Hindi (conversational)

Extra-curricular Activities

- Did a Railway clean-up at Bengaluru city station, acknowledged and appreciated by the Railway Minister of India, on Social Media, December 2016.
- Active Participant in charity marathons in the year 2016 and 2017.
- Participated in the Inter-College Quiz contest on Manufacturing technology organized by IMTMA to get acquainted with the latest technologies emerging in the manufacturing industry.
- Was engaged in conducting classes and organizing mock tests for college students in maths during the stay at Sri Ramakrishna Vidyarthi Mandiram, Bengaluru in the year 2016-17.

REFERENCES

Dr C. V. Chandrashekhara

Professor and Design Domain
Lead

drcvc@pes.edu
+91 9686296019

Dr T. R. Seetharam

Chair Professor in Thermal
Domain

tr.seetharam@pes.edu
+91 9449867800

Dr Amit Thakur

Associate Professor in Thermal
Domain

amitthakur@pes.edu
+91 9900169998