

SHANTANU VACHHANI

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EDUCATION

North Carolina State University

Master of Science in Mechanical Engineering

Raleigh, NC

May 2019

Birla Institute of Technology and Science (BITS), Pilani

Bachelor of Engineering in Mechanical Engineering

Goa, India

May 2017 GPA: 8.6/10

EXPERIENCE

Pawan Hans Ltd. - Intern

June-July 2016

Pawan Hans Ltd is a **government of India enterprise** that performs helicopter operations throughout India.

- Learnt about the various components of the helicopter (Jet Engine, Main Gear Box, Transmission Systems etc) and their functioning.
- Gained thorough understanding of the various maintenance operations being carried out in the **Component Repair Shop (CRS), Engine Shop** and the **Blade and Composite Shop**.
- Performed **Supply Chain Management** and **Quality control** practices to the helicopter parts like ball bearings, housings etc.
- Interacted with leading industry professionals and gathering information on the latest advancements and technologies in the aerospace industry.

Astech Systems - Intern

May-July 2015

Astech Systems is a plastic injection moulding company based in Mumbai.

- Performed the **Structural and Thermal analysis** of a **plastic seal** (used in electric meters)
 - Employing the various design considerations to find the maximum torque and stress at which the plastic seal becomes inoperative.
 - Used **Computer Aided Manufacturing (CAM)** tools to generate the toolpath for the lathe and milling machines used to manufacture the product.
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RESEARCH PROJECTS

Modelling of a latent heat storage system for a PV powered cooling application in the tropics

January-May 2017

Solar Energy Research Institute of Singapore (SERIS)

Singapore

- This project is aimed at developing a **validated system design** of using thermal storage for an off-grid, Solar Photovoltaic powered cooling system to tackle the problem of intermittency associated with solar energy.
- Modelled a **PV(Photovoltaic) powered cooling application** system using TRNSYS (Transient System Simulation Tool) with **thermal storage**.
- Compared the TRNSYS simulation results with the data gathered from the experimental setup at Bintan, Indonesia to validate the system design

Computational Fluid Dynamics Simulation of a Circulating Fluidized Bed Riser

May 2015-December 2016

Birla Institute of Technology and Science (BITS), Pilani K.K Birla Goa Campus

Goa, India

- This project funded by the **Department of Science and Technology(DST), India** is aimed at increasing the effectiveness of the CFB Boiler which is essential for curbing pollution and tackling the increasing energy demand.
 - Performed **Computational Fluid Dynamics (CFD) simulations** using to investigate the **hydrodynamics of multiphase flow** in the riser section of a Circulating Fluidized Bed(CFB) Boiler to eliminate dead zone formation and thereby increasing the efficiency of the riser.
 - Performed **sensitivity analysis** to check for the effect of the various parameters like temperature, air velocity, riser size etc. on the performance of the boiler.
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SKILLS AND COURSEWORK

Application Software: Matlab, SolidWorks, PTC Creo, ANSYS Fluent, ICEM CFD, ANSYS APDL, OpenFOAM, TRNSYS

Minitab Programming Languages: Basic C, Python

Relevant Coursework: Heat Transfer Theory and Applications, Foundations of Fluid Dynamics, Computational Fluid Mechanics and Heat Transfer

EXTRA-CURRICULARS

- Member - Department of Sponsorship and Marketing (DOSM) *August 2013-August 2016*
DOSM is responsible for seeking funding and sponsorship for the various festivals at BITS Pilani K.K Birla Goa Campus.
 - Member - Squash Team *August 2014- August 2017*
Participated in Spree (Sports festival of BITS Pilani K.K Birla Goa Campus) 2016
 - Event Manager - Squash *March 2016*
Managed the Squash event at Spree 2016 which saw the participation of various institutes across India.
 - Editorial Team - Smilyo Educational Charitable Society *August 2014-November 2014*
Smilyo is a educational charitable society situated in New Delhi, India which aims is to provide educational resources to the not-so privileged at the primary, secondary and higher education levels
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