

Building a toy car, leading school science projects team, and reading about industrial innovations sparked my interest in mechanical engineering, and this led me to the path I am currently pursuing. I had to succeed through competitive examinations to secure an opportunity to study at esteemed institutions, where I could fulfil my goal. My determination and solid conviction in my purpose, helped me pass two of the toughest engineering entrance tests in South-Asian region where only the top 0.5% amongst the participants are called for admission. I chose to pursue the mechanical engineering undergraduate degree at BMS College of Engineering in Bangalore, India since BMS is India's oldest private engineering institution with excellent research and industrial exposure, and I had a very good scholarship package which included not only the tuition waiver but also food and accommodation sponsored by the Government of India, through competitive COMPEX entrance scholarship.

At BMSCE, I have gained a fundamental and comprehensive background in mechanical engineering. I particularly enjoyed studying subjects like engineering mechanics, material science, design and manufacturing, thermodynamics, fluid mechanics, control engineering, mechatronics, and artificial intelligence, etc. Industrial visits were rewarding experiences as I gained a closer look at the application of mechanics and related theories. Industrial visit to National Aerospace Laboratory (NAL), one of the best research Institutes in India, allowed me an opportunity to interact with top scientists of India. They introduced and explained to us about composites manufacturing, Nano manufacturing, and various machining and cutting tools. Their work further sparked my interest to pursue a research career in mechanical engineering.

During the course of my engineering, I worked on a research project titled 'CFD study of Blood flow', where I studied blood flow in the carotid artery in human beings while we are resting and exercising moderately using Ansys Fluent. I underwent rigorous exposure to design and simulation software, which helped me to learn various practical and theoretical aspects of design and simulation. I presented my findings encapsulated as a research paper titled 'CFD study of Blood flow in Carotid Artery' at the 7th international and 45th national conference on Fluid Mechanics held by the Fluid Power Society (FMFP). This paper presentation was supported by the Technical Education Quality Improvement Programme of the Government of India (TEQIP III). The Key lectures at this conference were really fascinating and further honed my research interest to seek to contribute to science and society at large in future.

During 3rd year of my B.E. degree, I completed a project where I created empirical models for the machining processes applied on two aerospace materials Inconel 718 & Titanium 64 Alloys, using Minitab. An Experiment was set up to collect machining data from a Lathe machine manufactured by HMT that utilized a carbide-based tool. I gained good exposure to machining tools and various parameters involved in the machine, along with various tools and techniques of design of experiments, the effect of cutting speed, feed rate and depth of cut on the surface finish, tool life and cutting force was investigated. During the final year of my undergraduate degree, I successfully completed a project on Friction Stir Welding (FSW) of fly ash reinforced Aluminium Metal Matrix Composite, which was fabricated by the squeeze casting process. The Vertical Milling machine was reconfigured for FSW and mechanical and micro characterization was carried out on the fly-ash reinforced FSW welded joints. I was responsible for micro characterization of welded joint for which I went through trainings at the Indian Institute on sample

preparation for microstructural properties under professor Satyam Suhas. I had good exposure to SEM, OM along with a micro testing machine guide. A substantial improvement in mechanical and microstructure was found fly-ash reinforced joints compared to base metal FSW joints.

I have also been impressed by the facilities available at mechanical department at IIT Kharagpur for research and education. These are very much advanced to those very few available research programs in my country Nepal. I am interested in solid in MEMS, smart materials and composites. I am aware of the rigor and the dedication required for pursuing the graduate program at IIT Kharagpur, and I believe my strong undergraduate foundation with good achievements, have prepared me further research work. 20 years bottom the line I want to work as professor in my home country after completing Ph.D. enough exposure to research.