There are times when we want to test the versatility of our learnings and life provides us with the perfect platform! My summer break internship with BSC Rubber Industries (a manufacturer and supplier of rubber products), was one such opportunity. Here, I was assigned with the task of analyzing and improving the overall equipment efficiency of a machine. There were three aspects to this task: availability, performance, and quality. I worked towards increasing the machine availability during the eight-hour shift, by implementing a suitable preventive maintenance model and instructed the operator to fill in check sheets corresponding to regular inspections, which reduced downtime of the machine considerably. This helped in achieving the shift based production target by redefining the cycle time. I introduced a two-bin system wherein, one bin had raw rubber which was fed into the machine, and another bin was used for stock keeping purposes. This saved time and helped in achieving the production target within the predefined time. The rejection rate was brought down from 8% to 3.5% through a two-hour monitoring and regular dimensional inspection by the supervisor. Going beyond the assigned responsibilities, I assisted the team with the 3S implementation, by volunteering for carrying out routine inspections. We gradually increased the overall equipment efficiency from 65% to 79%. This valuable work exposure in a real-world setting has impelled me to explore the prospects of a career opportunity in the field of industrial engineering.

My undergrad curriculum provided me with the flexibility of choosing subjects that I enjoyed studying. Operations Research, with its array of concepts such as traveling salesman and queuing, along with data analytics exposed me to the concepts of technologies used in the field of IE. Subjects like production management and total quality management provided me with insights into the strategies and decision making processes required to drive continuous improvement in operations of industries. I was exposed to the basic concepts of operations management, statistical fundamentals of business management, data mining while studying for a diploma in business management, which have reinforced my understanding of IE. My affinity for mathematics has equipped me with the analytical and problem-solving skill sets to solve stochastic and probabilistic problems faced by the IE community.

Having a keen interest in operations research motivated me to work on my bachelor's thesis: Efficient utilization of weight and volume capacity of a fleet of goods containers. The objective here is to build an algorithmic model for transportation of goods, cargo, and shipments by utilizing the maximum load and volume capacity of the containers. The study is being carried out with a view to enable the freight companies in reducing costs and enhancing operational efficiency. I have identified the constraints posed such as categorization of goods according to their suitability, shortest route according to the consignments, delivery of goods within the prescribed time, maximizing the profit and providing customer satisfaction, and successfully developed a mathematical model for the intercity transport, using shortest route and minimum cost per volume using traveling salesman and transportation concepts. Moreover, I am also trying to implement algorithm theory and computational complexity theory to solve the combinatorial problem considering the constraints faced.

Being an aspiring IE engineer, it was only natural for me to explore the principles and concepts of manufacturing technologies. This resulted in working as an intern at Forbes Marshall, one of the pioneers in the processing industry. Here, I was able to validate the conceptual learning gained through my diploma and undergraduate studies by working as part of production planning, manufacturing, and design. The hands-on shop floor experience strengthened by practical and problem-solving skills and tested my aptitude for pursuing a career in the field of IE. The most challenging project that I worked on was: Development of safety Relief valve with stainless steel 304 internals and conducting lapping, steam/air tests on it. The existing gunmetal product had to be manufactured using an appropriate alternative material. Besides strengthening my proficiency in software usages like AutoCAD and Solid Edge, I also learned about product development and manufacturing cycles. Owing to my significant contributions and value-add performance, I was given additional responsibility of life cycle testing of various products like piston valve, steam water mixer and thermodynamic

steam trap. Here, I conducted the root cause analysis of the thermodynamic steam trap. I also managed to acquire a broad level understanding of the various aspects of operational efficiency through process simulation and observed failure modes along with crucial aspects of predictive maintenance.

While field experiences in the form of internship and professional engagements enabled me to enhance my technical proficiency, participating in extracurricular provided me opportunities to contribute towards social and community programs. During my first year, I was selected to be a part of the Mechanical Engineering Students' Association (MESA). We organized events like technical workshops, seminars, and guest lectures through MESA. My coordination and event management abilities for overseeing events such as Aerotrix RC Aircraft Design Workshop, by Skyfi Labs, were appreciated by the college faculty. I organized the headliner event for the cultural symposium of our college, wherein we witnessed a footfall of 1200 students from various universities across Western India.

This experience helped me improve my networking skills and built up my confidence and competency to manage larger events. I served as a peace ambassador for Guftagu, an Indo-Pak peace initiative by Youth for Peace International wherein we strived to bridge the gap between the youth of the nations by showcasing similarities in cultures and initiating talks to lay the groundwork for better relations between the countries. I wish to contribute to similar projects and initiatives during my time at the University. Additionally, I wish to be a part of INFORMS conferences and events and also try to make the best use of opportunities presented by the UF chapter of Institute of Industrial and Systems Engineers (IISE).

Following my graduation, I wish to work as an operations research manager/ quality engineer in IE sectors such as manufacturing, healthcare, and transportation, etc. I would also like to continue with my research work while being professionally engaged so that I can achieve the competency and confidence to work for a Fortune 500 company. Drawing from my industry exposure, business acumen, and technical knowledge, I would like to set up a consultancy firm to help businesses streamline their manufacturing and business operations to achieve operational excellence, growth, and profitability.

My undergraduate program and internships have enriched my theoretical knowledge and provided me practical exposure to excel at the graduate program at the _____ University. I would like to be a part of further research and also applied projects undertaken by the ___ and ___ labs. Working under distinguished professors such as _____ will take me a step further in establishing my hold in areas of discrete and stochastic optimization. If given an opportunity, I would be looking forward to work under _____ in global and combinatorial optimization to further extend the complexity of my Bachelor's project. The master's program at the _____ University, with its state-of-the-art facilities and demanding coursework will allow me to enhance my technical aptitude and nurture my competencies to succeed in my future aspirations as a graduate. I will do justice to the University as an alumnus in every future endeavor that I undertake.

With the drive to continuously improve and excel in every undertaking, I will uphold the standards of the university and strive hard to meet the expectations of a graduate student. I hope the Admissions committee renders me worthy of the program and I am looking forward to being a part of the incoming Fall 2018 class at the _____ University.