

SAMPLE SOP (COMPUTER SCIENCE)

From the beginning of the technological revolution, the gaming industry has foreseen extravagant growth. Be it the captivating gameplays, rising developers in the industry, or the large pool of users spending countless hours on its interface. Being a part of this herd of gamers, I have always been fascinated with the back-end working of its software. When I was 12 years old, I got my first computer, and it has always excited me to explore its components such as Operating Systems, Hardwares, Languages, etc. I believe these innovations are constantly evolving throughout decades and still hold scope for infinite creativity and logic. It is this belief, and my zest for computer applications that has led me to pursue a Master's degree in Computer Science, and xxx seems to be the perfect institution for me.

My journey in this field started in high school itself, where I was introduced to programming languages like Java and C++. This helped me strengthen the subject's foundation and made me clear about my future aspirations regarding the field. Trailing towards my goal of further exploring the subject, I enrolled for B. Tech in Computer Science from SRM University in India. Here, I was taught about the intricacies of Networking and Cloud Computing. My understanding of programming languages grew expeditiously as I got acquainted with Python and Javascript. Apart from languages, I was even taught about many cutting-edge technologies like AI and Big Data in my bachelor's. During my undergraduate tenure, I got the opportunity to work on an enthralling project titled 'Third Generation ATM using Face Recognition.' Currently, ATM security, even though being safeguarded on many levels of protection, it is prone to face different kinds of threats. Let it be GSM or RFID systems, humankind has always been finding ways to optimize security systems, thereby increasing their efficiency. As an attempt to solve this issue, we used biometric fingerprint and face recognition systems for ATM transactions. For Face Recognition, we tested many machine learning models to get the optimal solution, which took us around three months of continuous research. Other than that, we had to integrate the Hardware to software, which was an excruciating task as no one knew how to deal with it. With the guidance of my professors and several courses on Udemy, I was able to deal with the issue. My team and I published a paper on this project in the International Journal of Innovative Science and Research Technology in March -2018

To further hone my skills in a professional workspace, I started working as an intern in renowned entities like Hewlett Packard Enterprise & TATA Power-SED, where I worked on Big data using Hadoop and as GIS along with Photogrammetry, respectively. These internships helped me understand the real-world applications of the concepts I have been learning in my undergraduate studies.

After pursuing my bachelor's degree, I started working as a software developer at xxxx, where I worked in various technologies like Machine Learning, Cloud, and Web. Here I got the opportunity to work on multiple captivating projects, which helped me grow my understanding of the subject. One of the project was Car Damage Detection, where I developed a full-stack deep learning based application to detect damages in various parts of the vehicle. We trained the machine learning models in Google Colab and Sagemaker, developed the UI in Angular, and hosted the Flask server in AWS ECS. I am currently working on this AI Project, and the

research paper for the same will be published by January 15th. My second project was AWS Copilot, introduced by Amazon. Its main objective was to improve the management flow and encourage digitization of businesses. Here my job was to evaluate and find improvements for its forthcoming releases. My third project, Advanced Driver-Assistance Systems (ADAS) was for the TCS Ford Motor Company. Here I worked on a feature of ADAS called SPP (Steerable Path Polynomial), an algorithm used in Ford vehicles, where it detects the central lane of the road. Apart from the aforementioned projects, I have also dealt with technologies like Blockchain and DevOps- an amalgamation of software development and IT operations. As a token of appreciation towards my involvement in diverse projects, reputation for resolving problems, and improving customer satisfaction, my profile was considered for leading an on-site project in Australia.

I feel a sense of elation when I see my code run effectively. It is this feeling, which to date, drives me to not give up on even the toughest of problems. It is the passion and my zest for programming, collective with my desire to go deeper into the working of countless applications and technologies, which propels me to apply for MS in Computer Science. Working in the field for the last three years and gaining insights about the intricacies of the subject has forced my inquisitive mind to further explore the ins-and-outs of the field. After graduation, I would like to work for big tech giants like Google and Amazon as a Full Stack Developer to sharpen my skills and gain valuable insights in the corporate world. Eventually, I aim to leverage the acumen I will develop throughout my Masters and my work experience to start my own start-up, where I would sell Fintech (financial technology applications) based on Blockchain, VR/AR, or Data Science.

I'm certain that the academic acumen I have garnered throughout my undergraduate years, coupled with the professional expertise I gained from working with the reputed firms, proves my candidacy for pursuing the Masters in Computer Science at Boston University. It would be an honor to invest my analytical and intellectual prowess under the esteemed guidance of the highly regarded mentors such as Dr. Margrit Betke. Her works incorporating Artificial Intelligence in medical sciences is quite commendable. Under the supervision of recent 2020 Gitner Award winning lecturer Abbas Attarwala, who has done extensive research in the fields of HCI and Computer Systems, I'm sure I will be able to expand my intellectual boundaries. The program from your esteemed university is likely to add wings to my overall career aspirations and sketch my intellect to reach greater heights. In conclusion, I would like to thank the admission committee for allowing me to apply to your prestigious university and hope that the committee will consider my case.

SAMPLE SOP (MIS)

'If data is the jewel, then information is the crown.'

Technology today seems no less than a miracle. Be it Chrome's capability to autocomplete search results based on browser history or Tesla's self-driving Auto-pilot car; there are enough testimonials to corroborate the advancements made by technology over the past decade. And all these marvels have one thing in common – Data-driven Analysis. The technological advent introduced forty-four zettabytes worth of utilitarian data on the Internet. I believe, with the right analysis and interpretation techniques, this colossal amount of data can be used to extract practical and efficacious information crucial to deriving data-enabled decisions. I aim to be able to contribute towards this burgeoning field by developing intelligence-driven frameworks and incorporating them into robust systems, which in turn can significantly streamline the process of extracting valuable insights for educational, cultural, and socio-political advancements of the society. Intending to actualize this dream, I wish to apply for a Masters in Management Information Systems from the University of XYZ.

I started my tech journey by enrolling for Bachelor of Engineering at R.V College of Engineering with Computer Science as my major. Here, being introduced to subjects like Object Oriented programming in java, Big Data Analytics, Data Science, Machine Learning, and others inclined towards Data and Information Systems made me ecstatic. Wanting to implement my theoretical knowledge in a practical problem, I took up my first project - Process Scheduling Simulator using C++ and Multithreading Concepts, in my sophomore year. Developed using C++, my team tried to process a Scheduling Simulator using Multithreading concepts. This system presented a comprehensible interface that enabled users to integrate new processes in real-time by manipulating details like process id, CPU processing time, and other details. The second project-GUI based Movie Ticket Booking System developed using JDBC, JSP, and JavaFX was my next conscious attempt at exploiting the applications of data. As a part of this project, I created an Interactive GUI-based stand-alone platform facilitating effective ticket booking for movies. Next, I decided to push my analytical and interpretative skills further by pursuing a complex project aimed at alleviating the strain on non-renewable resources. My team, led by me, designed and created a system using Arduino and SQL called 'Solar Voltage Tracking and Monitoring.' This system was capable of intercepting Solar-energy and converting it into electrical energy– a form transmittable to various modules for analysis and distribution-control. With further probe into the aforementioned output, we could discern its inherent parameters such as Voltage, current, and temperature.

Along with my academic projects, I also enrolled in various courses like computer organization, discrete mathematics, both offered by NPTEL, and an AI course offered by IBM to accentuate my understanding of the domain. In my final year, my team decided to create a tool targeted at detecting, estimating, and attenuating unexpected side effects resulting from internal drug-drug reactions. We modeled the above problem as a convolutional graph neural network that operates in a multi-relational setting. Our biggest challenge was to develop a new multi-relational edge prediction model that uses the multimodal graph to predict drug-drug interactions as well as their type. With the help of exhaustive and thorough research on the topic, we were able to overcome this challenge. This model titled 'Estimating pharmacological side effects resulting from combinatorial consumption of medicinal drugs, using graph neural networks' is also in works to be published under a renowned journal. My work on the journal and the project were met with stupendous reviews and pronounced appreciation.

Along with excelling in academia, I ensured to be active in all domains crucial for the holistic development of an individual. Starting with being the Student outreach coordinator for Bengaluru GAFX Conference 2019, wherein it was upon my shoulders to campaign and coordinated an on-ground team of at least twenty-five universities. With my perseverance, I was able to achieve a record-breaking registration count. I am also the head of the college fashion team and an active member of the Cultural activity team. As an acknowledgment of my intuitiveness and audaciousness, the sponsorship team elected me to be the head of the during our Annual college fest. My volunteering activities at the university's Rotaract association encouraged people to participate in various altruistic activities. These roles inculcated an elevated sense of accountability and shaped me well enough to be a confident public speaker and leader.

Combining my proficiency in programming languages such as C, C++, Java, Python, and MySQL with my love for business and the analytical side of things, I decided to pursue an internship at AIDEAS as a Data Analyst. Here, it will be my responsibility to leverage crucial data insights from intelligent decision-making processes, along with designing, developing, and deploying custom applications for simplifying processes. I am certain that the relevant exposure acquired from this internship would be of paramount importance during my Master's journey.

I bring with me discipline essential for a competent stage such as your university. With my relentless optimism, working on developing systems that will eliminate human error through excellent prioritization of resources, optimum processing, and system performance that can incorporate high-value solutions that will elicit customer satisfaction, enhance retention and ensure industry dominance seems viable. The utilization of data-driven solutions and process innovation is inevitable for accomplishing a successful outcome and I seek to hone my skills in this direction.

I intend to diligently participate in every lecture, project, assignment, and lab to fully avail the learning opportunities that would be provided to me. After obtaining an advanced degree, I wish to work as a Business Analyst at product-based companies like Google, Facebook, and Microsoft to gain relevant experience. Here, I would aim to ascertain the areas of improvement and help analyze and mitigate their business problems. There is enough excitement and inquisitiveness in me about the opportunity to become an important stakeholder in creating cutting-edge solutions for diverse industries in the rapidly evolving 21st-century digital ecosystem.

I'm positive that my diligent nature, accompanied by my zeal for learning, proves my candidacy for the Masters in Management Information Systems at the globally acclaimed University of XYZ. Under the infallible guidance of XXXX, who has done extensive research in the field of Healthcare Analytics, I'm confident that I'll be able to extend my intellectual boundaries. His countless research articles in various distinguished journals are truly engaging. I fondly anticipate learning more about Operations and Supply Chain Management from Professor ABC whose expertise on the subject is quite commendable. I'm also looking forward to being part of clubs like 'Active Minds at UIC' and contribute to the rich culture at the University of XYZ. Lastly, I would like to thank the admissions committee for allowing me to propose my application and humbly request you to consider my case.

SAMPLE SOP (Mechanical Engineering)

*"The only person you are destined to become is the person you decide to be."
-Ralph Waldo Emerson*

The treasure trove of my childhood is filled with one delightful memory after the other, and it is one such memory that has made me the man I am today. Growing up in a family of farmers, I spent hours with my elder brother in the vast fields of xxx, the two of us frolicking amidst the afternoon sun, giggles hovering above us. We would be surrounded by pieces of agricultural equipment, and though I didn't acknowledge it sooner, curiosity was already fueling through my veins. On a day that seemed like any other, a brief conversation with my brother about our machinery led to the introduction of the field that would soon become the defining point of my life. My journey started with the ambition to ameliorate gadgetries and one little science exhibition. Giving into my new found passion and dipping into my bank of knowledge about farm equipment, I prepared an automatic spraying machine, which neither needed an electric supply nor a frequent pumping like conventional spray pumps. My participation in the science exhibition won me the second position amongst 250 other projects and showed me a new direction in life. Numerous science exhibitions later, my inclination towards mechanical engineering only strengthened, and holding the same curiosity as the little boy, I believe Doctor of Philosophy in Mechanical Engineering is the next step for me.

I completed my bachelor's degree in Mechanical Engineering from SNJB's College of Engineering, an institution affiliated with the University of Pune. During my time in college, I developed an interest in several captivating concepts like Fluid Mechanics, Finite Element Methods, Computer Oriented Numerical Methods, Heat Transfer, as well as Refrigeration & Air Conditioning. My primary efforts were dedicated to sharpening my knowledge and skills by participating in various competitive presentations and activities, such as the National Level Technical paper presentations, which aimed at spreading awareness on various socially connected topics through the National Service Scheme. My exposure and advancement in the aforementioned activities not only contributed towards my scholastic development but also promoted the overall growth of my personality. In my final year of graduation, I opted for 'Energy Audit and Management' as an elective and worked on a project titled 'Domestic Refrigeration System by Using LPG', where our team of four designed, fabricated, and tested an LPG operated domestic refrigeration system. While the primary portion of the project focused on making use of LPG as a fuel and a refrigerant in a domestic application, our team was also associated with manufacturing cooling boxes to test the refrigeration effect, manufacturing of evaporator, material selection for the evaporator, and system building to name a few. Upon the completion of my graduation, I prepped for a Graduate Aptitude Test in Engineering and embarked on my journey to pursue a Master's of Technology in Automobile Engineering.

My orientation towards subjects like Transmission System Theory and Design, Vehicle Dynamics, Finite Element Methods and Design of Experiments during my Master's degree ignited a keen interest in me, and I got the golden opportunity to work in the Light and Passenger vehicle segment of a reputable automotive company, Piaggio Vehicles Pvt. Ltd, where I was appointed as a Master Project Trainee in the Quality Assurance Department. During my tenure, I worked on a project titled "Failure Analysis of Ape-501/GL-435 Gear Box", which strived to reduce field failures of gears by finding the root cause of gear tooth failure. To dwell on the basics of the problem and best provide a solution, we indulged in various steps such as collecting samples of failed gears, comparing the failure data to a

competitive model, etc. In order to carry out a well, concise analysis, I drew on the knowledge imparted in me during my graduation and employed theoretical and practical ways by doing parametric modelling of the spur gear, performing its force, and conducting a stress analysis in the ANSYS software. By implementing the industrial approach, I carried out the failure analysis of various small parts of the vehicles and learned that in order to kill the failure of the part, it is important to kill the root cause of failure. Apart from implementing practical knowledge, I also studied the fundamental sources of failure of mechanical components, industrial engineering tools that are relevant to failure and failure analysis, macro and microscopic observation of fracture, mode of fracture, metallographic procedure and image analysis, use of fracture mechanics, fracture toughness principles in failure analysis, and analysis findings and report/recommendation writing. The project not only guided me immensely and equipped me with an experience like no other, but also led to the realization of my dream of teaching.

During my first year of Master's, I was a Teaching Assistant and taught Fluid Mechanics and Numerical Methods to undergraduate students pursuing Automobile Engineering. The experience proved fruitful and paved the way for future professional opportunities in the field of teaching. For the next few years, I worked as an Assistant Professor of Mechanical Engineering at Marathwada Mitra Mandal's College of Engineering in Pune, where I was instilled with academic responsibilities such as conducting theory and practical classes for a few subjects namely Transfer, Numerical Methods and Optimization (with MATLAB Programming) and Theory of Machines, as well as administrative responsibilities that include being the laboratory in charge, training, and placement coordinator to name a few. Following the same line of work, I took up the role of an Assistant Professor of Mechanical Engineering at Zeal College of Engineering and Research in Pune. Armed with my previous experience, I developed e-content and video lectures in the college and introduced a new way of teaching that aimed at communicating the environment of a classroom to students via video lectures during COVID-19. We expanded and adopted this practice, which led to 10TB worth of data being created and processed in the short span of 10 weeks. Continuing my love for teaching, I am currently serving as an Assistant Professor in Mechanical Engineering at the Pune Institute of Computer Technology. Apart from conducting practical and theory lectures in Systems in Mechanical Engineering and Engineering Graphics, I am also working on a project titled "IoT Based Real-Time Outdoor Air Quality Monitoring System".

My years of teaching and interacting with bright, young minds act as a driving force to obtain a PhD in Mechanical Engineering and further better myself. Upon the completion of my PhD, I plan to gain additional insight by offering my services to the industry's research and development department. Once equipped with sufficient knowledge and experience, I would like to get back to teaching and focus on creating a balance between theoretical and practical knowledge. I believe that I can bridge the gap between the two, and provide my students with meaningful insights about the implementation of knowledge in the professional world. My academic credentials paired with my work experience, and the ambition to inspire the next generation, makes me a viable candidate to join the legacy of your esteemed institution. I deem your university as the best possible way for the actualization of my dream and hope that the admissions committee considers my case.