In a world of constantly evolving technology, my journey into the world of computer science began with an experience that would be considered quite ordinary today: my first online purchase. As I pressed the “Buy Now” button, I was filled with the rush of making a new purchase, but at the same time there was also this sense of wonder.  I kept thinking about what went on behind the scenes that a simple click of a button would result in a package arriving at my doorstep. This curiosity which was sparked in me that day would later shape my academic and career aspirations. During junior college, I pursued computer science, delving into programming, compiler processes, and computer architecture. Despite limited computer exposure due to my middle-class background, I compensated through after hours doubt-solving sessions and extra lab hours, ultimately achieving top scores in computer science and an understanding of fundamental concepts.

I pursued my undergraduate degree in Computer Science at MES College of Engineering, Pune, affiliated with the esteemed Savitribai Phule Pune University. During my first year, I had the opportunity to delve into the fundamentals of programming and data structures, discovering their practical applications in problem solving. I developed a particular interest in data structures and their adaptability to solve various problems depending upon the unique characteristic of each data structure being used. Having learned some of these concepts beforehand in junior college, helped me gain a deeper understanding of these subjects. Additionally, I became a member of my college’s Google Developer Students Club, where I actively participated in coding competitions and hackathons, further honing my skills and cultivating a genuine interest to apply these in real world scenario.

During my second year in college, as the first wave of COVID-19 pandemic hit my city, leading to a sudden shift in online classes. While this transition disrupted many of the extracurricular activities I had been engaged in, I tried to make best of a difficult situation and use the extra time to further my knowledge and skills. It was during this period that I decided to take online courses to delve in web technology, the very field that had sparked my initial interest in computer science. I learned how to create fully functional websites, mastering the ReactJS framework for front-end development and building robust backend servers using NodeJs which handled API calls and also seamlessly interacted with databases, allowing for data storage and modification. To leverage the skills acquired during the lockdown, a classmate and I initiated a start-up venture, providing services to the local businesses transitioning to online platforms due to the pandemic. In my role as the system architect for our first significant client CyberKing Capitals an investment consultancy, I was tasked with ensuring that our product not only met all the client’s requirements but also maintained high-quality standards. This experience proved invaluable in developing my technical and project management skills, setting the stage for my future endeavours in computer science.

The system, which I had the opportunity to architect, was a management website tailored for the company’s employees, each with specific roles such as telecallers, managers, and administrators. The platform enabled leads(people who had shown interest in the services of the company and registered for a call back) to be efficiently batched and assigned to telecallers or managers. Admins could register employees and their credentials would be stored securely by encrypting them. Registered users could login in, view, and update lead information in a tabular format. Manager’s had the oversight of the telecaller’s work, while administrators enjoyed a holistic view of the entire system, complete with additional telemetry data such as the number of new leads and successful onboardings. The registration of new users, lead assignment, and data viewing and updating were accomplished through calls to the backend server's API, constructed using NodeJS and ExpressJS. This backend acted as a bridge between the PostgreSQL database and the frontend, performing intermediate processing, including authentication, pagination of database records, and data extraction for presentation to administrators. Initially, the system operated seamlessly for up to 10,000 leads. However, as the number of leads and client requirements grew, we encountered various challenges. On the technical side, we faced issues with inefficient application state management, which led to UI lag. To address this, I implemented Redux, a JavaScript library for centralized state management, decoupling components and improving the user experience. We also adopted GraphQL to streamline network calls, reducing latency when loading the UI. Around the same time, I was learning database management concepts in college, learning about entity-relationship models, normal forms, and optimized querying. Applying this knowledge, we restructured our database, eliminating redundancy and optimizing queries for enhanced performance. Additionally, we offloaded frequent database tasks to stored procedures. Beyond these technical challenges, our startup experience taught us valuable lessons in project management. We transitioned from the traditional waterfall methodology to the agile approach, facilitating regular requirement discussions, documentation, and efficient project scheduling. All these experiences not only helped me to hone my skills but also provided a practical understanding of the concepts I learned in college, reinforcing their real world relevance.

During my final year of undergraduate studies, I was exploring about the future of web technology which led me into emerging concepts like web3 and decentralized applications. In the course of my research, I learned about blockchain technology and its huge potential. I learned how the combination of public key cryptography and various consensus mechanisms ensures the immutability and tamper-proof nature of a distributed ledger. Additionally, I became acquainted with Hyperledger Fabric, which offers a suite of blockchain frameworks and tools for diverse business use cases, ranging from healthcare to supply chain and finance. I have currently enrolled in online courses to further my knowledge in these technologies.

Following graduation, I joined Persistent Systems Limited as a full-stack developer and became part of healthcare project focused on digital medication prescriptions. In this role, I learned how to build software solutions using micro services architecture, initially working as a backend developer configuring Azure functions using the .NET framework and deploying them to implement business logic. I was quickly promoted to full stack developer, responsible for implementing end-to-end functionality for new features and modules. I worked with the Blazer framework to create responsive frontends. Additionally, I also worked with Azure Data Factory for ETL operations on stored data and developed PowerShell scripts to facilitate data transformation and migration between Azure database resources. Furthermore, I have gained valuable insights into how digital systems are leveraged in the healthcare domain to enhance the quality of patient treatment, support healthcare providers, and aid research companies, while adhering to various regulations and compliance requirements governing digital healthcare systems. I was particularly interested in the potential of blockchain technology in the healthcare sector. It offers a secure and interoperable solution for sharing Electronic Health Care records among providers, enables transparent tracking of pharmaceutical and medical device supply chains, and empowers patients by granting them control over their healthcare data. Currently I am conducting research which is dedicated to proposing a private blockchain system based on Hyperledger. This system implements fine-grained attribute-based access control over the storage and sharing of healthcare data, in accordance with patient authorization, while maintaining an immutable record of data usage on the blockchain. It aims to enhance the sharing of healthcare data among providers while ensuring compliance with government regulations and policies.

Considering the combined technical knowledge I have gained during my undergraduate studies, my experience being a part of a start-up environment, my current role as a full-stack developer, and learning about blockchain technology and its potential to create digital platforms that are more secure, interoperable and private. I am driven to pursue a career where I can combine these skills together. I aim to become a blockchain developer developing decentralized applications capable of revolutionizing the current industry standards. Blockchain technology is built upon the fundamental concepts of computer networking, cryptography, and distributed systems, and I firmly believe that to truly master these skills, a strong grasp of the fundamentals is essential. Throughout my academic journey, I've discovered that I'm a pragmatic learner who thrives with a blend of research-oriented learning, hands-on practical application through projects and internships, along with the solid theoretical knowledge gained in traditional classroom lectures. Pursuing a computer science degree in the United States offers the flexibility that aligns with my learning style. Therefore, I am convinced that your organization's program will provide me with a comprehensive understanding of the core concepts integral to blockchain technology. This adaptable approach to education will undoubtedly help me get a competitive advantage and a robust foundation to excel as a blockchain developer.

After completing my master’s in computer science, I am eager to join companies such as Medichain and CoralHealth, where cutting-edge research is underway to leverage blockchain for secure medical data sharing and the traceability of medical records. Additionally, I am keen on contributing my expertise to IBM’s esteemed blockchain department, known for its pioneering role in enterprise solutions. This experience will enable me to develop decentralised applications and gain industry-standard insights. My ultimate goal is to bring this knowledge back to my homeland, collaborating with innovative firms like Vitraya, which focuses on blockchain-driven health insurance claim management solutions. With a growing interest in digitalizing healthcare processes in my country, I’m determined to make a significant impact. Furthermore, I’m excited about the prospect of driving adoption of a blockchain-based Adhaar-card, providing a secure and tamper-proof universal proof of identity and address for Indian residents, thereby reducing fraudulent activities and enhancing securities.