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-college 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, I was able to share some of knowledge with my classmates which 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 for practical application in real world scenarios.

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. These servers not only handled authentication and API calls from the front end but 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. Our first significant client, Cyberking Capitals, an investment consultancy company, entrusted us with their project. In my role as the system architect, 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 unique set of requirements from Cyberking Capitals, necessitated the development of two distinct websites. The first was a brochure website designed to showcase the company’s products and services while allowing potential clients to register for a callback, referred to as “leads” in the system. The second, 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 to be efficiently batched and assigned to telecallers or managers. User credentials were securely stored in an encrypted format within an SQL database. 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 both technical and non-technical 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 fullstack developer, responsible for implementing end-to-end functionality for new features and modules. I worked with the Blazor framework to create responsive frontends that communicated with Azure functions in the backend via Azure API Management Service. 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.

During my tenure at the company, 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. I also acquired knowledge about the regulations and compliance requirements governing digital healthcare systems, particularly in safeguarding patient data and ensuring security. I was interested in applying the blockchain technology to healthcare domain. I am currently conducting research involving hyperledger Fabric, it aims at exploring solutions which could streamline the storage and exchange of healthcare information, including Electronic Health Records(EHRs) and Personal Health Record(PHRs) leveraging the tamper-proof and security of blockchain technology. The goal is to centralize data storage, enhance interoperability, and maintain the integrity, security, and privacy of this information. Ultimately, such solutions could empower healthcare providers to deliver personalized care to their patients more efficiently.

Despite being very active academically, I was equally passionate about sports, especially soccer. Being a very competitive person, the game provided me with an outlet for my competitive spirit, and allowed me to push and exceed my boundaries and fostered personal growth. Playing football instilled in me the values of hard work and persistence, and made me realise that no success comes without hard work. These principles have stayed with me and transcended the field, influencing various aspects of my life. As an introverted individual, stepping onto the field and playing in front of a crowd and securing victories helped me bolster my confidence, and taught me the transformative power of stepping out of one’s comfort zone. As a part of the team, we achieved many milestones, finishing as runner-up in the AIT Sports Fest, a state-level inter-collegiate tournament, and clinching victory in the Shahu Trophy, another prestigious state-level soccer tournament organised by AISSMS College being some of the notable ones. These experiences reinforced the notion that teamwork, determination and self-improvement are integral components of success, both on and off the field.

Considering the combined technical knowledge I have gained during my undergraduate studies, my experience being a part of a start-up environment focused mainly on web technology, 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. After completing my master’s in computer science, I aspire to take a career path in the dynamic field of blockchain technology. 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 traceabilility 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

However, I firmly believe mastering this skill begins with mastering the basics. Blockchain technology is built upon the fundamental concepts of computer networking, cryptography, and distributed systems. Consequently, I am convinced that pursuing a master’s degree in computer science is a crucial step towards gaining a comprehensive understanding of these core concepts, providing me with a competitive edge and the foundation to excel as a blockchain developer in the future.