From gesture control to Sophia-the social humanoid robot, intelligence in systems has grown by leaps and bounds. Artificial Intelligence indeed turns fiction into fact, and we are witnessing technology transition from luxury to an absolute necessity. What better path for a career than to be a part of this surreal revolution. From working on a 15$ Arduino Mega board for building smart DIY projects as a high school student, to developing an intelligent solution for combating fire hazards, I believe it has been my prolonged fascination towards computer technology and intelligent systems that has driven me to come this far in my career path where I feel graduate studies in Computer Science will help me contribute at its bleeding edge.

My major project was a great learning curve and I collaborated with a batchmate to develop an ‘Autonomous Fire Combat Turret’ which uses a Haar based cascade classifier and Adboost classification technique to identify fire as an object. The system runs a combat protocol after identifying a fire-frame by deploying an extinguishing agent over the target area and alerting the security personnel. It consists of a dual axis robotic turret chassis having a surveillance camera which is installed on the ceiling of fire prone areas. Although the system can function autonomously, we improvised the utility of the turret by streaming the live feed on a GUI where the user can control the turret using an optical mouse and deploy the extinguishing agent on a click. We received accolades for the Best Major Project at our college and presented our work at the Youthcon Zonal Engineering Expo organized by the *Rotary Club of Pune Royal*. Pursuing graduate studies in Computer Science will help me collaborate with likeminded people to better understand areas pertaining to scalability and performance.

     Given my passion for programming, I was keen about building a strong foundation in programming along with embedded systems design, robotics and automation. So, during my undergraduate studies in Electronics and Telecommunication Engineering at Savitribai Phule Pune, I decided to explore computer engineering through courses on Data Structures and Algorithms, Object Oriented Programming, System Programming and Operating systems and Computer Networks. These courses helped me gain proficiency in programming constructs and work with linear and non-linear data structures and better understand the core concepts in Computer Science. The pursuit to further build upon my knowledge, led me to work on building an E2E online electronic shopping portal in Java and an RFID based parking management system as a part of my project-based learning tasks.

A strong foundation in embedded systems enabled me to work on intangible serial data acquired from various sensors and effectively program microcontrollers to process it for tangible applications. I developed a Self-positioning Solar Panel System which identifies the optimal orientation to harness maximum energy and display the alignment parameters and power output on a Tkinter based GUI. Furthermore, I designed a 2D CNC printer assembly and programmed motor drives and servos to plot images fed through a graphic code. Thus, my coursework helped me hone my programming and problem-solving skills to develop such projects involving autonomous systems.

The cumulative knowledge of embedded systems and programming brought me to the conviction that  a strong foundation in AI and ML will help me understand how to extract, analyze, and  utilize the data accumulated by an autonomous system, to help it become truly autonomous. This persuaded me to attend a bootcamp on Machine Learning and Deep Learning Fundamentals at Indian Institute of Technology, Bombay and I gained insights about classification, regression and object detection techniques.  Furthermore, I chose the electives ‘Digital Image and Video Processing’ and ‘Machine Learning’ to learn image detection, analysis, restoration, image data compression, enhancement and estimation and ML techniques that helped me develop my senior year project.

Owing to my strong academics, I interned at the Tata Power Company Limited, Mumbai as SCADA(Supervisory Control and Data Acquisition) Intern where I had an opportunity to develop an application to assist SCADA engineers to troubleshoot operational errors simplifying the experience of these engineers who initially had to navigate through tedious excel sheets to identify the redressal steps. I quickly learnt web-development programming languages: HTML, CSS, Bootstrap, PHP and NoSQL database MongoDB and deployed the web application on the organization’s intranet. The application garnered positive reviews from the users and the effort was appreciated by TPC on their internal portal.

This experience encouraged me to seek full time working opportunities and I got placed at 4 MNCs through college placement (Infosys, Cognizant, Accenture, TCS). I chose to join Infosys Pvt. Ltd. as a Systems Engineer owing to the learning opportunities during the training program at Infosys Corporate University, Mysore. I was trained in industry standard Python, C# and SDET technologies and I’m an Infosys Certified Python Developer. I have been working as an Automation Test Engineer for Westpac Banking Corporation, Sydney (Client) on a cross platform migration project. I design and execute robust automation test suites for functional and reduce manual test team’s efforts by developing automation scripts. Furthermore, I developed GUIs for migration utilities and complex SQL scripts for data extraction. Thus, my 16-month experience has given me a tremendous perspective of the software development life cycle.

My undergraduate studies, internship and full-time work experience helped me to discern my areas of interests and identify my strengths. I believe that the next logical step in my career path is taking graduate studies in Computer Science focused on Machine Learning and Artificial Intelligence which resonate with my interests in intelligent systems. After graduating, I aim to work as a research developer and undertake more challenging roles while working for tech giants like Qualcomm and Google pioneering in technological advancements and focus on developing competency in Machine Learning and other applied areas. I envision myself heading a startup in the long run which develops consumer products like smart wearables and intelligent safety systems and thereby support young and budding engineers like me.

The graduate program offered by University of Texas at Dallas will undoubtedly equip me with the right knowledge, skills and collaboration opportunities to realize my goals to the full extent. Moreover, Prof. Sriram Natarajan’s work in ‘Knowledge Based Systems’ and Prof. Kurt VanLehn’s work in ‘*Cognitive Science’* is extremely inspiring and aligns with my research interests, and I am keen to seek their guidance for my research undertakings. The practically oriented in-depth coursework in Intelligent Systems track offered by UTD, state of art labs equipped with cutting-edge technology and versatile teaching body will help me get a clear understanding of specific fields.

I am an extremely motivated individual and my resourcefulness will enable me to make the most of the opportunities I shall get at the university and emerge as a confident professional, proving to be an asset to your university.