* Why are you interested in the major you indicated as your first-choice major? (300 Words Max)

The Roomba’ utility, a symbol of hardware-software synergy, inspired my journey to create a home-cleaning robot using robotics-kits parts. Through 4+ iterations of broken parts and programming glitches, I realized the need for a deeper education in engineering and computer science. Embracing 3D printing, exploring Raspberry Pi’s, and producing custom-AI, I soon designed various new household gadgets.

However, my ambitions now extend to pioneering innovations with global transformative potential. To achieve this, I must, again, advance my skills and knowledge.

In this endeavor, Rice's ethos of community-based research and innovation beckons to me. Rice stands as a unique institution that channels resources through real-world companies, organizations, and missions, all of which wield the potential to generate tangible and lasting impacts. This approach represents my aspirations of combining technical knowledge in global issues. Studying mechanical engineering and computer science at Rice, I aim to create a Roomba for the world's future.

The Roomba, epitomizes the perfect fusion of hardware functionality and software innovation in solving a noble everyday problem. Inspired by its remarkable utility, I embarked on a personal journey to create my own home-cleaning robot using robotics-kit components. Regrettably, my first, second, third, and fourth iterations met with failures, plagued by plastic components breaking, motors overheating, and programming glitches.

Through these setbacks, I soon recognized that the key to achieving my ambitions lay in deepening my education in engineering and computer science. I thirsted for knowledge and diligently honed new skills, pushing my boundaries with an open mind. I soon learned to leverage 3D Printing, subtractive manufacturing, Raspberry Pi's, and server code to design a myriad of household gadgets.

Today, my sights are on goals that extend far beyond resolving household issues. I aspire to pioneer robots, tools, software, and concepts that have the power to transform the world. To realize this vision, I understand that I must once again propel myself forward, refining my skills, expanding my knowledge, and amassing invaluable experience.

In this endeavor, UT-Austin's ethos of community-based research and innovation beckons to me. UT-Austin stands as a unique institution that channels resources through real-world companies, organizations, and missions, all of which wield the potential to generate tangible and lasting impacts. This approach resonates deeply with my mission of applying technical knowledge in a manner that leaves a lasting impression.

Studying mechanical engineering and computer science at UT-Austin represents the perfect confluence of my aspirations and the educational foundation I require to transcend the ordinary. It is a beacon of hope for anyone with the desire to change the world through innovation, and it is here that I seek to craft a Roomba for the world’s future.

**The Roomba, epitomizes the perfect fusion of hardware functionality and software innovation in solving a noble everyday problem. Inspired by its remarkable utility, I embarked on a personal journey to create my own home-cleaning robot using robotics-kit components. Regrettably, my first, second, third, and fourth iterations met with failures, plagued by plastic components breaking, motors overheating, and programming glitches.**

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**Studying mechanical engineering (and hopefully double-majoring with computer science) at UT-Austin represents the perfect confluence of my aspirations and the educational foundation I require to transcend the ordinary. It is a beacon of hope for anyone with the desire to change the world through innovation, and it is here that I seek to craft a Roomba for the world’s future.**

* Describe how your experiences, perspectives, talents, and/or your involvement in leadership activities (at your school, job, community, or within your family) will help you to make an impact both in and out of the classroom while enrolled at UT. (300 Words Max)

None of our family knew what to expect, especially against days of dwindling resources and no electricity or water. This is because my family and I were facing the Texas Winter Freeze Disaster.

One challenge was the pipe failures forcing a ration of 2 water-bottles per day, but this was the easy part. Nonfunctional plumbing also eliminated flushing. At my suggestion, we reluctantly installed plastic bags in the toilet bowls to hold our waste in and tie that bag up for later disposal.

Meanwhile, the power-outage meant that we couldn’t cook any meals on our electric stoves. Fortunately, I remembered the propane burners from my boy scouts supplies to cook up soups, eggs, and breads.

I also initiated some entertainment, as working through these problems still left plenty of empty time. Bringing out board games, crafts, and cards, it was rewarding to see hours of fun each day. This morale boost enabled us to face other oncoming disaster challenges.

Despite the bags of human waste, lukewarm meals, and cards played through woolen-gloved hands, we eventually left home to find shelter elsewhere anyways. This experience taught me gratitude for my amenities, the value of resourcefulness, and the gift of finding joy through crisis. I now recognize that these principles were crucial in my future successes, where I conquered other unexpected challenges with appreciation, adaptability, and awareness.

* The core purpose of The University of Texas at Austin is, To Transform Lives for the Benefit of Society. Please share how you believe your experience at UT-Austin will prepare you to Change the World after you graduate. (300 Words Max)

I have written many applications before, but none of them were competing against CEOs, industry professionals, or corporations. I have given many speeches and presentations before, but none of them were 60 minutes long industry talks. However, writing my proposal to be a guest speaker at Autodesk University was one of the easiest, most successful applications I have written, and delivering my hour-long presentation in the overbooked room was one of my most rewarding experiences. This was because I was engaging in an occasion that let one of my inner callings flow: my calling to enable others.

I was at this event, one of the largest international engineering conferences in the world, to give a presentation on ‘How to Advance the Future of Engineering Education’. My speech involved calls to action to revolutionise education, increase businesses’ community involvement, and to reshape our preconceived notions in order to be ready for future industry revolutions. However, the most important part of my presentation was connecting with the audience. I told many jokes that registered with sweet laughter and shared personal anecdotes that could put my audience in my spot. I had even overheard a group of colleagues discussing some things they were wondering, and was able to answer them directly in my speech without them knowing that I knew their queries. Overall, I was pleased with these experiences because I could tell that those executives, PHDs, and experts felt inspired by my mission to help others become the problem-solvers of the future.

In this way, my mission to ‘transform lives for the benefit of society’ originates from pursuing a path that inspires and encourages others to follow their path. This philosophy does not only crop up at AU, but in my daily peer interactions as well. For example, my position as captain of the DiscoBots international robotics team involves a coordination of people, resources and robots across 6+ schools because of my ‘open door’ mindset. At the Discobots, I organised and conducted outreach programmes that incorporated 3 under-resourced schools (and ~30 members) into our robotics teams who would not have had the chance of the robotics competition education that I have thrived from.

Reflecting on these experiences, I realise that that application, presentation, robotics outreach, and so many more occurrences came so easily to me because it harmonised with my desire to galvanise others. From this, I can see UT-Austin’s large, diverse, and unique culture as the next stepping stone in my journey to change the lives of others. Although I may not have a concrete outline of my plan to transform lives, the opportunities to learn in this global, interdisciplinary, and impact-driven environment will guide me to refining my path of enabling others.

**I don’t normally find myself writing applications that compete against CEOs, industry-professionals, or corporations, nor do I usually present 60-minute industry-talks. However, writing my proposal to be a speaker at one of the largest international engineering conferences in the world, Autodesk University, and the hour-long speech on ‘How to Advance the Future of Engineering Education’ was one of my most rewarding and easy experiences. This was because I was engaging in my inner mission: inspiring and enabling others.**

**My speech involved calls to revolutionise education, increase businesses’ community involvement, and to be ready for industry revolutions. I told jokes that erupted laughter and shared personal anecdotes that put the audience in my shoes. This connection was one of my best occasions of inspiring others.**

**This philosophy also extends into my position as captain of the DiscoBots Robotics Teams. My role involves coordination and leadership across 6+ schools. This scale of cooperation, although formidable, comes easy to me because of my ‘open-door’ mindset. I conduct outreach programmes to find schools without robotics resources and incorporate their students into our team. Within just one-and-a-half years of this initiative, I integrated 3 schools and ~6500 students now have the opportunity of the robotics education that I have thrived from.**

**Reflecting on these experiences, I realise that the application, presentation, robotics outreach, and so many more occurrences came so easily to me because it harmonised with my internal desire to galvanise others. From this, I can see UT-Austin’s large, diverse, and unique culture as the next stepping stone in my journey to change the lives of others. Although I may not have a concrete outline of my plan to transform lives, the opportunities to learn in this global, interdisciplinary, and impact-driven environment will guide me to refining my path of enabling others.**

* Please share background on events or special circumstances that you feel may have impacted your high school academic performance. If your response to this question is similar to one of the Common App Personal Essays, feel free to simply copy and paste the important parts of your essay here. (300 Words Max)

My family and friends have endured the Mumbai Floods, Turkey Earthquakes, Hurricane Harvey, and Winter Storm Uri. These events left a profound impact on my outlooks and initiatives.

Living through the floods, storms, winds, ice, and debris was an ever-present sense of impending doom. It was scary knowing if there was some emergency, we had no means of calling for help. It was dreadful knowing that as our supplies dwindled, there were no shops to stock up essentials.

Despite these experiences, I consider myself lucky that my immediate family escaped permanent harm. This fortune reminded me of the capricious, unforgiving nature of such events and their far-reaching consequences.

This recognition of the unresolved challenges society faces in dealing with natural disasters led me to inventing the Robust Adaptive Network (RAN). RAN is a system of drones and rovers that provides essential cell signals, delivers urgent supplies, and relays important information during disasters. I've worked on this project with support from the Mayor of Houston, the Taco Bell Foundation, DiscoBots, Ashoka, ION Houston, and more.

Even with my programming models, 3D designs, and prototypes, I acknowledge the years of challenges ahead in realising my invention. This is a significant reason I want to study robotics in college. I believe that many global problems can be addressed through advances in engineering and computer science. My pursuit of this world-class education and my insights from personal experience drive me to solve pressing issues in the world.

* **Tell us your story. What unique opportunities or challenges have you experienced throughout your high school career that have shaped who you are today? (700 words max)**

1) My family and I are from India, but moved to Singapore (and lived there for 9 years), and now we live in the US. One unique result of this (which I wasn’t able to appropriately highlight in the other sections) is my proficiency in Hindi, Mandarin, and English.

I hold the traditional backgrounds and perspectives of my heritage to be very valuable. This is one of the reasons I maintain a native proficiency in my mother tongue, Hindi.

Along with this, my education outside home has been in English, so I am also natively proficient in English.

However, after being born in India and immigrating to Singapore, I decided to pursue learning Mandarin so I could better connect with the vast majority of Singaporeans who are Chinese. Even after advice against learning this impossible language at that late age (especially since most Singaporeans speak English anyways), I worked hard to learn the language and surpassed some native speakers of my age. Although I am now in the US, where I lack much incentive to keep up my Mandarin, I still practice and improve. I have written essays, won speech contests, and can hold a proper conversation in Mandarin. I am especially proud of this skill because I do not have any Chinese relatives/background to build off of, I instead had to start independently and have successfully reached a respectable position.

2) As a citizen of Singapore, I will have to complete a compulsory National Service after my high school completion. After this experience, I hope to bring back lessons from a novel experience and a rare perspective to the Rice community.

3) I would like to highlight some of my community involvements. In addition to my impact-driven projects, activities, and interests, I also dedicate substantial time to volunteering in community programs and initiatives. Here is a link to my community-hours log: https://docs.google.com/document/d/1NMJOxV938lkRo2drqXECyAFeHCo1ZYmL/

I also want to show that not only do I serve my communities thoroughly, but my communities recognize me back. For example, in the end of my 10th grade year, I was invited to be a guest speaker at the Vex Robotics World Championship (2022). I have also been a speaker at the General Consulate of India. Additionally, Autodesk (a prominent engineering software company) accepted me to be an industry speaker where CEOs, business leaders, and professionals will attend my full-capacity session.

Thank you.

Sincerely,

Soumil Goyal

My family, friends and I have navigated through our share of hardships including the Mumbai Floods, Turkey Earthquakes, Hurricane Harvey, and Winter Storm Uri. These events left an impactful mark on my psyche, profoundly impacting my outlooks and initiatives.

Living through the floods, storms, winds, ice, and debris was an ever-present sense of impending doom. It was scary knowing if there was some emergency, we had no means of calling for help. It was dreadful knowing that as our supplies dwindled, there were no shops to stock up essentials.

Despite these experiences, I consider myself lucky that my immediate family escaped permanent harm. This fortune reminded me of the capricious, unforgiving nature of such events and their far-reaching consequences.

This recognition of the unresolved challenges society faces in dealing with natural disasters led me to inventing the Robust Adaptive Network (RAN). RAN is my patent-pending invention that aids victims during a natural disaster. It is a system of drones and rovers that provides essential cell signals, delivers urgent supplies, and relays important information during disasters. I've worked on this project with support from the Mayor of Houston, the Taco Bell Foundation, DiscoBots, Ashoka, ION Houston, and more.

However, despite the progress with my many programming libraries, 3D CAD designs, and subsystem prototypes, I acknowledge the years of challenges ahead in fully finishing my invention. This is a significant reason I want to study engineering and computer science at UT-Austin. I believe that many global problems can be addressed through advances in these fields and I am committed to keep developing this invention, especially during the growth and insights I will gain from my courses, mentors, and peers. My pursuit of this world-class education and my insights from personal experience drive me to solve pressing issues like these in the world.

***Because I am a Singaporean citizen, I now face my mandatory military service term. Every boy in Singapore of age 18 is drafted into National Service for two years to contribute to Singapore's defense. This means, since I am now finishing high school and am already 18, I will be enlisting to the Singapore Ministry of Defence this July. My service will end about 2 years later, so the soonest I will be able to attend college is in the Fall of 2026.***

***The attached documents include proof of the nature of my upcoming service from the Singapore government’s website and a photocopy of my confirmed enlistment date.***

***After my national service, I plan to return to Texas where I can continue my education at UT, adding my new perspectives and experiences to your campus.***