* When it comes to deciding whether to submit standardized test scores, occasionally applicants want us to better understand the individual context of their decision. If you'd like to take advantage of this opportunity, please share any information about your decision here. This is an optional question for those who may want to provide additional context for consideration. (150 words max)
* Most students choose their intended major or area of study based on a passion or inspiration that’s developed over time – what passion or inspiration led you to choose this area of study?(300 word maximum)
  + **We were just coming back from the Vex Robotics World Championships after a fantastic competitive season. The end of this tournament marked the end of any upcoming competitions, but marked the beginning of my planned outreach initiatives. As the new captain of the DiscoBots this year, I made it my mission for our team to use our resources to benefit the community by visiting middle schools to show them our robots, let them ask questions, and inspire them to be roboticists. However, I was currently stuck on an important point. As part of our middle school visits, we needed to give a presentation, and I needed to communicate why I enjoyed robotics and why others should too. I knew I liked the engineering and computer science behind robotics, but I couldn’t seem to understand why engineering and computer science were my passions. I have had millions of hobbies over my years. Whether they turned into winning the highest rating in Texas’ biggest theater competition, arguing contentious debates at the national-level, winning a gold medal in an international taekwondo competition, or making a rubik’s cube training business, none of them could capture me as much as robotics always would. I would never get bored from designing, building, and programming because every problem felt like something new! When I used to swim, by the time I got very good, I had already almost mastered the technique leaving only repetitive practice for me. Or when I was put through piano class, each repetition of practicing the keys was a reminder of the fact that what I was doing had already been achieved by thousands of people before me (I wasn't solving anything new). Conversely, robotics was always a new experience, solving your own, new problems each time was more empowering. Even with this, though, the way was more empowering was the way robotics have the power to push limits. For example, in one of my robotics competitions, I had to design and build a robot to shoot balls into an almost 9ft high hoop. After some clever design, iterative engineering, and fine tuning, our robot is better at finding balls and shooting than us, the people that made it. In this way, we were able to use engineering to push boundaries beyond our own, a magical experience that shows the power of engineering.**
  + Returning from the Vex Robotics World Championships marked not just the culmination of an incredible competitive season but also heralded a new phase for our robotics team. As the newly appointed captain this year, I envisioned that after our tournaments were over, we would leverage our resources to serve the community, igniting young minds through outreach initiatives in middle schools.

However, amidst planning my presentation, a pivotal question loomed over me: How could I effectively convey my passion for engineering and persuade others to embrace it too? The answer eluded me despite my profound appreciation for engineering and computer science.

My journey through various hobbies—be it clinching top honors in Texas' largest theater competition, engaging in heated national-level debates, earning gold in an international taekwondo competition, or even establishing a Rubik's Cube tutoring enterprise— were all very rewarding, but none rivaled the captivating allure of robotics.

**Throughout my long robotics journey, one of my notable moments was in 2022’s FIRST Robotics Competition. My team and I were tasked to craft a robot capable of collecting and shooting large balls into a small 9-foot-high hoop. Through iterative engineering, clever programming, and meticulous fine-tuning, our robot not only worked, but surpassed our own abilities! Witnessing our creation outperform its creators showed me engineering’s enchanting potential. And while countless other high school teams are also embarking on this quest, the hurdles we encounter are uniquely ours to surmount. Each team operates within distinctive constraints, be it in tools, resources, or team dynamics. Thus, our adventure was actually navigating uncharted territories where triumph represented unraveling solutions to previously unsolved problems. It wasn't merely about shooting balls into a hoop; it was about unveiling unknown possibilities and crafting solutions to unique challenges, an aspect that beckons me to push the possibilities of myself, my peers, and what we are given.**

**Today, my sights are on goals that extend beyond conquering robotics tournaments. I aspire to pioneer robots, tools, software, and concepts that have the power to improve the world. To realize this vision, I understand that I must propel myself forward, refining my skills, expanding my knowledge, and amassing invaluable experience. In this endeavor, Carnegie Mellon's integrated master's-bachelor's (IMB) in mechanical engineering and an additional major in robotics (BSR) share the mindsets I see in the spirit of engineering. I want to enroll in these programs because they share my values for being not just a platform to learn but an opportunity to immerse myself in a culture that thrives on pushing boundaries. The hands-on approach filled with prototyping, research, problem-solving applications and the building of a changemaker’s mindset at CMU will allow me to make solutions that once again pass our own boundaries, tackling the world’s unsolved problems.**

***Throughout my journey in robotics, one of the most noteworthy moments was during the 2022 FIRST Robotics Competition. In this contest, my team and I were tasked with creating a robot capable of collecting and shooting large balls into a small, 9-foot-high hoop. Through iterative engineering, clever programming, and meticulous fine-tuning, our robot not only functioned but also exceeded our own abilities! Witnessing our creation outperform its creators revealed the captivating potential of engineering. And even though numerous other high school teams undertook the same quest, the obstacles we each encountered were exclusively ours to overcome. Each team works within its unique constraints of tools, resources, or group dynamics. Thus, it wasn't just about shooting balls into a hoop; it was about uncovering unknown possibilities and crafting solutions for unique challenges - an aspect that beckons me to expand the capabilities of myself, my peers, and our unique circumstances.***

***Today, my ambitions reach far beyond winning robotics tournaments. I yearn to develop revolutionary robots, tools, software, and concepts capable of bettering the world. To accomplish this, I recognize the need to propel myself forward by polishing my skills, broadening my knowledge, and amassing invaluable experience. In this endeavor, Carnegie Mellon's integrated-master's-bachelor's (IMB) in Mechanical Engineering and an additional major in Robotics (BSR) are in sync with the mindsets I perceive in the spirit of engineering. I wish to enroll in these programs because they resonate with my values of not just being a learning platform, but an opportunity to immerse myself in a culture that prides itself on pushing boundaries. The hands-on approach at CMU, brimming with prototyping, research, problem-solving applications, and the atmosphere of a change-maker's mindset, will empower me to devise solutions that once again surpass our boundaries, thereby learning how to tackle the world's unique, unsolved issues.***

While all these offered skill refinement through repetitive practice, robotics was an uncharted odyssey, a symphony of innovation waiting to unfold.

What set robotics apart was its perpetual novelty. Unlike endeavors where mastery led to monotony, robotics was an ever-evolving realm. Each design, build, and program posed fresh challenges, a constant stream of invigorating puzzles to solve.

The essence of empowerment within robotics lay not just in solving new problems but in the boundless scope it presented. I vividly recall a competition where our task was to engineer a robot capable of shooting balls into a towering 9-foot high hoop. Through astute design, iterative engineering, and meticulous fine-tuning, our creation surpassed our own abilities. Witnessing our robot outperform its creators showcased the incredible prowess of engineering—an enchanting testament to its potential.

Robotics, in its essence, embodies the power to transcend limits. It encapsulates the magical journey of leveraging engineering to push boundaries far beyond our perceived capabilities. Our achievements weren’t confined merely to victories in competitions but in the realization that through robotics, we harnessed the transformative force of engineering to achieve the seemingly impossible.

* + 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, Carnegie Mellon's ethos of community-based research and innovation beckons to me. CMU 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 robotics at Carnegie Mellon University represents the perfect confluence of my aspirations and the educational foundation I require to transcend the ordinary. It is a beacon of hope for my desire to change the world through innovation, and it is here that I seek to craft a Roomba for the world’s future.
* Many students pursue college for a specific degree, career opportunity or personal goal. Whichever it may be, learning will be critical to achieve your ultimate goal. As you think ahead to the process of learning during your college years, how will you define a successful college experience?(300 word maximum)

In 10th grade, after getting constantly bombarded with the “where do you want to go to college?” query, I decided to just search up ‘best robotics college’ and try to remember the top few results as my next reply. However, in my half-hearted quest, Carnegie Mellon University suddenly stood out to me. It wasn't just the #1 ranking nor the pioneering robotics program that caught my interest; rather, it was the resonating headline displayed on the website that read: "We specialize in cross-campus collaboration."

This line spoke to me because interdisciplinary learning is my forte; many of my proudest accomplishments stem from leveraging diverse blends of abilities. For instance, my Pedal Power community project— a stationary bicycle that charges one’s electronic devices through their own pedaling —required the fusion of scientific concepts, engineering skill, artistic design, computer modeling, persuasive communication, and relationship-building that brought the project to fruition. This project, famous in my school for encouraging exercise, demonstrating off-grid power solutions, and raising awareness of electricity wastage, epitomizes my belief in tackling substantial challenges through a synthesis of interdisciplinary skill sets.

Envisioning my college experience, I aspire to confront more substantial challenges by leveraging innovative ideas through a multi-faceted approach. It is in this context that Carnegie Mellon's culture is the ideal environment for my pursuits of tackling big challenges using big ideas. CMU’s focus on real-world impact and a penchant for cross-disciplinary innovation aligns seamlessly with my aspiration to focus on impactful endeavors capable of transforming the world. After all, the world’s wide-ranging, unsolved problems will require integrative solutions that can only be achieved with a philosophy like Carnegie Mellon’s. As a Tartan, my college experience would involve relentlessly applying my education to tackle community needs, using a wide-ranging skill set to push global limits.

* + When searching up “best robotics college” in 10th grade, Carnegie Mellon did not only stand out to me because of its #1 ranking or it being one of the first colleges to implement a robotics program (BSR); CMU captured my attention because, as I was browsing through its website, I was greeted by the heading “We specialize in cross-campus collaboration”. This stood out to me because interdisciplinary learning has also been my strong suit. I have found a majority of my successes to have come from a heavy mix of many fields. For example, completing my Pedal Power community project, where I installed a stationary bicycle that can charge your phone by pedaling, used technical engineering knowledge, artistic design capability, computer modeling, persuasive speaking, and social relationships to get done. In this way, my vision of a successful college experience would involve tackling big challenges using big ideas with an open mind. I recognize CMU’s culture of open-mindedness and cross-discopline innovations as the ideal environment to focus on impacts that can change the world.
  + Research
  + Open mindedness
  + “My heart is in the work”
  + Big ideas start here
  + “We specialize in cross-campus collaboration.”

***In 10th grade, after repeatedly being asked the “Where do you want to go to college?” question, I decided to simply search ‘best robotics college’ and try to remember the top few results for my next reply. However, during my half-hearted quest, Carnegie Mellon University suddenly stood out to me. It wasn't just CMU’s number-one ranking or the fact that it houses America’s first robotics department that caught my interest; rather, it was the captivating headline displayed on the website: "We specialize in cross-campus collaboration."***

***This line resonated with me because interdisciplinary learning is my forte; many of my proudest accomplishments stem from leveraging diverse blends of abilities. For instance, my Pedal Power community project— a stationary bicycle that charges one’s electronic devices through their own pedaling —required the fusion of scientific concepts, engineering skills, artistic design, computer modeling, persuasive communication, and relationship-building that brought the project to fruition. This project, famous in my school for encouraging exercise, demonstrating off-grid power solutions, and raising awareness of electricity wastage, epitomizes my belief in tackling substantial challenges through a synthesis of interdisciplinary skill sets.***

***Envisioning my college experience, I aspire to keep confronting more significant challenges by leveraging innovative ideas through a multi-faceted approach. It is in this context that Carnegie Mellon's culture provides the ideal environment for my pursuit of tackling big challenges using big ideas. CMU’s focus on real-world impacts and cross-disciplinary innovation aligns perfectly with my aspiration to focus on impactful endeavors capable of transforming the world. After all, the world’s wide-ranging, unsolved problems will require integrative solutions that can only be achieved with a philosophy like Carnegie Mellon’s. As a Tartan, my college experience would involve relentlessly applying my education to address community needs, using a wide-ranging skill set to push myself towards societal innovation.***

* Consider your application as a whole. What do you personally want to emphasize about your application for the admission committee’s consideration? Highlight something that’s important to you or something you haven’t had a chance to share. Tell us, don’t show us (no websites please).(300 word maximum)
  + Carnegie being a perfect embodiment of myself
  + COmmunity work/reciprocation
  + Galvanizing 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 transform 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, establishing a strong connection that inspired 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 programs to find schools without robotics resources and incorporate their students into our team. Within just 1.5 years of this initiative, I integrated 4 schools and ~6500 students now have the opportunity of the robotics education that I have thrived from.

Reflecting on these experiences, I realize that the application, presentation, robotics outreach, and so many more occurrences came so easily to me because it harmonized with my internal desire to galvanize others. From this, I can see Carnegie Mellon's large, diverse, and unique culture as the next steppingstone in my journey to change the lives of others. The opportunities to learn in this global, interdisciplinary, and impact-driven environment will help me not only be a tartan that excels academically and advances research, but also be a community member following my inner practice of inspiring 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 delivering an hour-long speech on ‘How to Advance the Future of Engineering Education’ was one of my most rewarding and effortless experiences. This was because I was engaging in my inner mission: inspiring and enabling others.***

***My speech involved calls to transform education, increase businesses’ community involvement, and prepare for upcoming industry revolutions. I told jokes that erupted laughter and shared personal anecdotes that put the audience in my shoes, establishing a strong connection that inspired others.***

***This inspiration-based 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 naturally to me because of my ‘open-door’ mindset. I conduct outreach programs to find schools without robotics resources and incorporate their students into our team. Within just 1.5 years of this initiative, our team has integrated 4 schools and ~6500 students now have the opportunity to benefit from the robotics education that I have thrived from.***

***Reflecting on these experiences, I realize that the Autodesk University application and presentation, robotics outreach, and numerous other occurrences came so easily to me because they harmonized with my internal desire to galvanize others. From this, I see Carnegie Mellon's large, diverse, and unique culture as the next steppingstone in my journey to change the lives of others. The opportunities to learn in this global, interdisciplinary, and impact-driven environment will help me not only excel academically and advance research, but also follow my inner practice of inspiring others in the Tartan community.***

As mentioned in one of my original essays, your heading of “*We specialize in cross-campus collaboration.*” deeply resonates with my core value of exploration across diverse disciplines. To further demonstrate this, I would like to highlight some of my new achievements since my initial application:

In the Vex Robotics Competition, my varsity team and I secured 2 finalist positions in 3 tournaments and won the prestigious Excellence Award, qualifying us for UIL, State, and National Championships. We are ranked 20th in our state and were quarter-finalists at the National Tournament. My team and I also won the FRC District Engineering Inspiration Award, the second-highest award in the FIRST Robotics Competition.

In terms of community service, I have gained 18 more volunteer-hours through my National Honors Society service ([300+ total volunteer hours now](https://docs.google.com/document/d/1NMJOxV938lkRo2drqXECyAFeHCo1ZYmL/)). Aside from this, I’ve been coaching my alma-mater middle school’s robotics team for the past 3 years. They recently won 3 Judge’s Awards and have the highest Virtual Skills score in Texas (35th in the world)! Also, my Screen Salvagers project (an organization I founded to collect disposed plastic sheets around the school and repurpose them for robotics uses) had successful months, we collected an additional 80 lbs. of disposed plastic sheets. Our total collection is now 480+ lbs. of plastic saved from disposal.

As mentioned in my distinctions, I was an industry-talk host at Autodesk University, one of the world’s largest international engineering conferences. The Autodesk executives I met there requested for me to be a guest speaker in their annual TinkerCAD summit, a milestone event for the educational products teams (I said “YES!” of course). After attending that event, they invited me to be the founding member of their new Autodesk Student Ambassadors Program, an opportunity for community outreach through a multi-billion-dollar company (I said “YES!” of course)!

Other: Debate: ranked up to 1st; University Interscholastic League (UIL) Maths Competitions: 7th in calculator applications, 7th in number sense, and 6th in advanced mathematics; Won 3rd in computer science Java competition; Reagan Scholarship semi-finalist; NHS Scholarship finalist.

In addition to all this, I also had the chance to connect with a CMU alumnus recently, Mr Samuel D. Phillips. Learning about his CMU experience confirmed my long-standing impression that CMU is the best-fit next-step in my journey. In return, I know that my passions of thriving in the interdisciplinary, ambitious, and diverse aspects of CMU’s culture will be a powerful complement to your class, and I would be honored to join the Tartan family.

In my original application, I discussed how CMU’s heading of "We specialize in cross-campus collaboration" aligns with my strength in exploring diverse disciplines. To further demonstrate this, I would like to highlight some new achievements since applying:

* Robotics: my team and I reached 2 tournament finals and won the prestigious Excellence Award, qualifying us for UIL, State, and National Championships. We ranked 20th statewide and were National quarter-finalists. Additionally, we won the FRC District Engineering Inspiration Award, the second-highest award in the FIRST Robotics Competition.
* Debate: ranked up to 1st, qualified for state.
* UIL Math Competitions: ranked 7th in calculator applications, 7th in number sense, and 6th in advanced mathematics.
* 3rd in Computer Science Java competition.
* Reagan Scholarship semi-finalist, NHS scholarship finalist.
* Community Service: I served 42 more volunteer hours this semester, surpassing 320+ hours total. I was also the head-coach of my alma-mater middle school's robotics team this year, leading them to win 3 Judge's Awards and achieve the highest Virtual Skills score in Texas (35th in the world!).
* Following my Autodesk University conference, I was invited to be a guest speaker at the TinkerCAD Summit 2024 to provide feedback on upcoming Autodesk educational products. Later, I was also invited to be a founding member of Autodesk’s new Student Ambassadors Program!

In addition to those accomplishments, I also had the chance to connect with CMU alumnus Mr. Samuel Phillips. Learning about his CMU experience confirmed my long-standing impression that for my plans, projects, and innovations that transcend any single department of study, CMU is the best next step in my journey. In return, I know that my passions of thriving in the interdisciplinary, ambitious, and diverse aspects of CMU’s culture will be a powerful complement to your class, and I would be honored to join the Tartan family.