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**Sample essays 2017**

**CMU**

**#0000FF's Joe Walsh**

**Write about someone who has influenced your life or a time that you have experienced great change.**

When life throws me a curve, I try to find an equation for the best-fit line. Actually, life never really throws me a perfect curve, only a series of data that resembles one. Most people are content by connecting these random dots, forming a rudimentary picture by which they interpolate a meaning. But to me, all of that unpredictable, theoretical thought never made as much sense as a good logarithmic function. My mind tries to think in absolutes, in binary, with little extraneous interpretation. I can handle 1's and 0's, but understanding the 2's is what takes effort. Life threw me a big '2' when my older brother passed away of cancer when I was just fourteen. My mind could not construct a logical way to feel. In an instant, my perfect, predictable world was turned upside-down. Feelings of confusion, regret, and sorrow swirled in my head, all of them unforeseen obstacles in my attempts to make a predictable world. Grasping for an answer, I struggled to keep afloat, grabbing any steady truth I could hold on to. I needed to take the zeros and ones of my mind and make a two, a task I could not fathom how to do at the time. What I didn't realize was that sometimes the answer is as simple as '10'. Looking to the life my brother led for inspiration, I saw his courage and strength in the face of adversity and found my ability to grow stronger. After having his leg amputated at the age of six as a result of his first bout with cancer, he lived oblivious to his handicap, continuing to golf, swim, ski, and succeed. In my brother's example, I learned, adapted, and grew stronger. I took the pieces of my binary thinking and constructed a two. Developing a sort of assembly code for my brain, I constructed a solid foundation for abstract thinking in my once absolute world.

Seeing the way this method of thought fit me, I took the binary foundation I started with and synthesized it into more intricate forms. Though I'll probably never be able to predict the actions of the stock market through patterns in pi, my system helps me to analyze the curves that life throws me. I can break down problems and work logically and efficiently towards the solution in ways I never thought possible. I am even able to understand and appreciate literature, a concept that was always just out of my grasp. To me, literature was a world where there was no right answer, no function to relate everything, just some random dots with an infinite number of ways to connect them. Now, instead of disregarding anything without an absolute solution, seeing only right and wrong, black and white, I can finally interpret with all the colors of the rainbow, from #FF0000 to #330066. I want to keep building this analytical knowledge, opening doors and solving problems with a delicate mix of reason and the abstract, connecting the dots in my own unique, yet logical way.

# Nine Mile Nicole E. DiPaolo

## Write about an experience that, although unexpected or even unpleasant, has helped shape you into the person you are today.

As is the case with many twelve-year-old sixth graders, I used to be a little self-centered. I was in the middle of puberty, with hormones raging and jumbling my mind in all kinds of ways, and the fact that I was slightly socially awkward and seen as a "geek" to begin with did nothing to help my situation. I thought this sixth-grade version of hell would never end - and as a coping mechanism, I started to turn inward and ignore the friends I did have at school. This would have completely isolated me if it were not for one seemingly ordinary spring day during March of that year.

Like every afternoon, I left my middle school building at the east entrance, where my mom would usually park her car. This time, though, instead of seeing my mom, I saw a crowd of small children from the elementary school (the school ran from kindergarten to eighth grade, so we interacted often with the younger kids). I peered into the crowd and finally saw my mom - with a puppy in her arms. I was baffled. When had we ever discussed getting a dog? We must be babysitting someone else's puppy, I reasoned. I wormed my way through the swarm of children and asked my mom, "Whose dog is this?"

"She's yours!" my mom answered joyfully. The dog squirmed in her arms.

"You went to the pet store and just got a dog?"

"No, I found her!"

My mom proceeded to take me and our new companion to the car and tell me just how this little bundle of fur had found her way into our lives. She had been driving down Nine Mile Road (yes, the one found a mile due north of Eminem's famed 8 Mile) in an area of town she didn't usually frequent. Suddenly she had seen a small dog dart across the road to the shoulder. The dog appeared to be getting ready to cross again, and my mom was terrified of seeing it run over by a fast-approaching semi. So, being the impulsive yet compassionate person that she was, she pulled over and called to it. To her surprise, the dog romped right over to her and hopped into the car. After a quick trip to the vet (where it was revealed that "it" was actually a "she" and that "she" was a beagle of about six months old) my mom continued on to pick me up from school.

I was surprised, to say the least. I wasn't sure how I would be able to deal with a dog in the house; neither of my parents nor I had ever had one as a pet. If no one claimed this dog as their lost pet, we would be learning how to take care of a dog from scratch.

On the way home, I christened our new pet with a name: Candy, because her pink little nose called to mind those candy buttons enjoyed by small children everywhere. Once we arrived at home, the learning process began. At first she sat on the floor in the kitchen, looking as confused as we all were. I sat on the floor and scratched her head, as I had done with other people's dogs. She suddenly rolled over, belly up, and looked at me expectantly. It took me a few seconds, but I figured out that she wanted me to rub her tummy. When I obliged, she visibly relaxed and wagged her tail as much as she could in such a position. I realized that, even though I could never have imagined such a situation a few hours ago, I was growing to like this change in events.

That was over five years ago. Candy now (usually) sleeps in my bed, and although she coats my sheets with dog hair and tends to hog the blankets - not to mention she snores almost as much as my dad does - I couldn't be happier that she was brought to us. I'm not sure how she will take my being away at college next year - but I can guarantee that I'll be home often, just to see her.

# En Garde Jason Joo

## Topic of your choice

Some consider fencing an outdated sport that has become nothing more than a simple game of electric tag. Others are not as belittling and see it as a modern interpretation of an ancient sport. To me, however, fencing is much more than just a pastime; it is my model for life.

The fencing match always begins off the fencing strip. Before the match, I go over tactics and review any pertinent previous matches. My coach usually comes over and gives me some advice, but sometimes I'm on my own. By the time I get on the strip and hook up to the scoring apparatus, I have sized up my competition and noted his significant attributes, such as his height, his reputation, and his national rank. The latter information, no matter how intimidating, does not dictate what I'll do, as such data can be quite misleading. When the director yells "Fence!", I already know what my first actions will be.

This analytical approach to a fencing match is the same one I use when confronting a challenge outside of the strip. Before tackling it, I mentally prepare myself and plan what I'll do. Sometimes I'll get help and advice; other times, I'm on my own. Once I have a clear agenda and goal, I step up and take on the challenge.

The match begins, and my opponent and I immediately advance down the strip with our foils poised to strike. We both vie for control as one attacks and the other retreats and parries. Of course, fencing is not that simple; there are the complex counter-attacks and attacks-in-prep as well. Throughout the entire match I am constantly considering possible ways to control my opponent and score a touch. Even if he scores a touch, I stay focused no matter what the score is.

Likewise, I am rarely discouraged when facing obstacles. Sometimes they get the best of me, but at other times I have an edge over them. Either way, I maintain my sangfroid and never back down.

After scoring the winning touch, I remove my mask, shake hands with my opponent, and walk away victorious. Immediately, I begin reviewing the match, noting what worked, and what didn't. If, on the other hand, I lose, I still shake hands with my adversary, thank him, and walk away. I note what tactics and strategies don't work and change them accordingly.

In life, I do the same. An accomplishment calls for a celebration, but not arrogance; failure should be met with contemplation, but not discouragement. Thus, when faced with a similar challenge later on, I am better prepared.

Fencing is my paradigm for life. Whether I am solving a challenging math problem or applying to colleges, I am always planning, executing, and learning. My actions become more refined with each new experience, and the final step to an accomplishment is like the winning touch of a bout: not only a victory in itself, but also the first step in preparation for the next victory.

# Creativity from Tragedy Dylan W

## How has a significant event in your life been a learning experience?

I remember sobbing with my face pressed against the wooden swing set in my backyard while my parents yelled at each other on the patio. I remember playing with my toys in my room only to go hide in the darkness of my closet because my parents were in the midst of an intense argument. I remember hating my home life because I knew that my friend's parents did not argue as severely as mine. I remember a lot of things from my parents' unhealthy marriage and eventual divorce. They hurt me a lot, but they also changed me.

Ever since I could walk, I remember my parents arguing. I never knew what about, but that did not matter. I just knew that the fighting was bad and that it was not normal. My parents would exchange vicious words, often concluding with someone slamming doors, shedding tears, or both. Their arguing changed me. I eventually became more introverted: quieter and more imaginative. I heard too much noise at home, and I feared that if I spoke, perhaps I would also yell. I did not want to endanger my friendships at school.

As I grew less talkative, I became more imaginative. I liked to pretend that my home life was without yelling and discord. My fantasies continued to grow in complexity. I imagined places, people and other things in my head and wanted to see these fantasies with my own eyes, so I drew. I drew houses that floated in the sky, airplanes that could explore the oceans, and creatures not yet known to the world.

There was a time when I was unable to draw within the lines in a coloring book; I was the worst "artist" in my kindergarten. As my imagination developed, so did my drawings. I drew because my parents argued. I drew because it kept me focused on peace. I drew because I could transcend the chaos. When my parents finally divorced, I began to change once more. Any sorrow, fear and anger produced by the divorce began to dissolve. I found a new desire to try to make friends and talk with others. However, parts of me stayed the same. I still love to draw.

# A Global Citizen Anonymous

## Why is the completion of a postsecondary program important to you, and what do you hope to achieve once you get a degree?

In high school, college is often made to seem like an end-all, be-all experience - the pinnacle of one's life. I know that is not true. In college we prepare for life beyond it, in my case for a lifetime of global citizenship.

I was born in China and did not arrive to the United States until I was five years old. My parents emigrated to America because they were offered graduate school assistantships at the University of Georgia. At that time, only a few students allowed to leave China for certain periods but thousands were applying, so it was an extremely rare and hard-sought opportunity for them. They were allowed to leave to continue their education, so from a very young age, I was taught that education can take me anywhere while ignorance will lead me nowhere. I have kept those teachings in my heart as I adjusted to American life, new schools, and new friends. Looking back, I can confidently say that I feel successful in my endeavors thus far because everywhere I have gone, I have tried to learn as much as possible.

In my eighteen years of life, it's been hard for me to turn down opportunities so I feel that I've taken advantage of all the opportunities that I have been given. My high school is a small, private school that I attend on scholarship. Although I was a new student in 9th grade and almost everyone else knew each other already, I quickly rose to the top of the class and will graduate as the valedictorian. I have also volunteered for many years, working on poverty and disease issues in my town and around the world. This summer I hope to travel to Africa to build schoolhouses for children orphaned by HIV/AIDS in communities devastated by disease and poverty. I care about these issues not because I live in poverty or with a deadly disease, but because I have learned of them and understand their implications in the modern world. That knowledge has expanded my realm of compassion, service, and understanding.

Life doesn't stop after college. I plan to double major in biology and economics as an undergraduate at Harvard University, then pursue a Ph.D. in economics. My education will give me the background to continue my efforts to promote public health worldwide. Without postsecondary education, I would not be able to reach my full potential for improving the lives of others as an exemplary global citizen.

# Engineering - More than a Major Anthony Leontiev

## Explain why you have chosen your major, department, or program.

From an early age, I have been taught to think analytically. Born in Kiev, Ukraine, I am the son of two mathematics majors. My father, a software developer, followed his job to the United States when I was still a toddler, taking me my mother and me along. Concerned that I would grow up with less than my full potential, my parents constantly strove to challenge me intellectually. In middle school, I became extremely interested in math. The simple act of solving problems became fascinating; x and y constantly played hide and seek with me, and I found them every time. By eighth grade, I had completed an extracurricular course in trigonometry, and by tenth, I finished the first level of calculus.

Through my interest in math and logic, I developed a knack for computers and programming. Ever the foolish enthusiast, I leapt immediately into the most advanced procedural language – C. Console applications that translate English into Pig Latin may not have a profound impact on society, but it was through simple programs like these that I grew. Though they were hardly complicated or useful, I prided myself in their creation; they were the work of my fingers, and each executable contained, along with its import and export table, a bit of my soul. My first real project started after I was introduced to a new computer game. A player controls a tank and adjusts its firing angle and muzzle velocity in an attempt to hit an enemy. Inspired, I began working on a computer program that would calculate the parameters required to hit a certain spot on the two-dimensional playing field. Physics would become an integral part of my project; however, this class would not be in my schedule for another year. Therefore, I taught myself kinematics and successfully analyzed the physics engine in the game. After weeks of coding and testing the program was complete. It worked just as I had intended it to.

By creating “oneshot,” as I called it, I combined my interests in math and programming to design something. Although it took me weeks of work, I enjoyed the process and the creative thinking involved. I believe that it is this type of creativity that is my strong point and that I can apply it to the real world. That is why I want to study to become a computer engineer. When I was younger, I thought that money was paramount to all else in life and wished to become a lawyer or a doctor. I planned to attend a prestigious university and emerge an instant millionaire. However, I realized later that I should remain true to my interests. I would never study law or medicine simply because I am not cut out to be a lawyer or a doctor. Through and through, I am an engineer.

Since then, I have continued to pursue my interests. I attended the New Jersey Governor’s School for Engineering and Technology this past summer, where I programmed a robot and conducted a research project with a group of talented youths. I continued to take challenging classes in math; recently, I completed a course in multivariable calculus at my local county college, and I plan to take differential equations next semester. Also, I have entered programming competitions and started a coding project with one of my Governor’s School friends. My passion for creation continues to expand, and I look ahead to college and a program that will fuel my desire to learn. Carnegie Mellon University’s world renowned computer engineering program will provide me with the environment I need to follow my interests, and I am confident that I will contribute much to the projects of which I am a part.

# My Two Passions Rachael Ji Yoon Kim

## Please submit a one-page, single-spaced essay that explains why you have chosen your major, department or program.

As a young aficionado of poetry and prose, I would love to develop my skills through a disciplined and distinguished writing program; Carnegie Mellon’s College of Humanities & Social Sciences offers just that. Believing one must be a great reader before becoming a great writer, I indulge in books of every genre to expand my range of knowledge, and I think this has made writing my forte. The Bachelor of Arts in Creative Writing offered by the English department at CMU offers a similar range, with a curriculum comprised of fiction, screen writing, playwriting, nonfiction, and poetry.

The faculty and students alike of the Creative Writing major improve each other’s abilities by utilizing extensive critique in workshops. Although I have had the honor of being granted international, national, and state awards for my writing, there is still much I can learn from fellow writers. These workshops allow classmates to feed off each other’s strengths in a mutually beneficial connection. With as renowned and accomplished a group of professors as at Carnegie Mellon, students are more equipped than ever to succeed in academia as well as in the real world. They also have the opportunity to work one-on-one with talented professors to complete an honors thesis. Carnegie Mellon’s Creative Writing program is an ideal setting in which to improve writing skills, not only because of its talented professors, but also because of its Gladys Schmitt Creative Writing Center. This facility serves as an indispensable resource for students and teachers.

Although reading and writing are two of my most prized pursuits, my interests extend even farther, and I enjoy learning about many other subjects with equal gusto. One example of a different focus is the business field, and consequently I am drawn to the renowned Tepper School of Business. During the summer before my junior year, I studied alongside college students in a Pre-College Program at Johns Hopkins University. One of the classes I attended was Introduction to Business. As a businessman himself, my father had encouraged me to enroll in this course. At first I was skeptical, but soon the fascinating material captured my attention. Not only did we learn about the history of business, but also about the numerous aspects of business in the modern world. Excelling in the class and engaging in one-on-one discussions with the professor, I absorbed knowledge like a thirsty sponge.

One part of the Tepper School of Business that I would love to be a part of is its undergraduate business program. Because of the multitude of business fields and opportunities, I think that the provided academic advisors at the Tepper School can certainly help students find appropriate focuses for their studies, according to their strong suits. The Tepper School of Business also serves as a great resource for participating in study abroad programs and internships, which would enrich my education to a great extent by allowing me to apply what I learn in class to the real world. After completing a Bachelor’s degree in the undergraduate business program, I would like to enroll in the Tepper MBA program to continue my learning process. My love of language and communication draws me particularly to Public Relations or another area of business relating to involving oneself with people.

# Cryptography at Carnegie Anonymous

## Please submit a one-page, single-spaced essay that explains why you have chosen your major, department or program. This essay should include the reasons why you've chosen the major, any goals or relevant work plans and any other information you would like us to know. If you are applying to more than one college or program, please mention each college or program you are applying to. Because our admission committees review applicants by college and programs, your essay can impact our final decision. Please do not exceed one page for this essay.

I firmly believe that there exists an inborn connection between the fields of mathematics and language. This understanding has always come to me intuitively, and yet every English teacher I’ve ever had has asserted his or her dislike or even downright loathing for numbers. My math teachers, too, often justify typos in handouts by saying, “That’s why I’m not an English teacher!” Only my Algebra II teacher in eighth grade, Ms. Steffero, confirmed my theory that the two disciplines can in fact coexist peacefully.

Whenever I see any word, phrase, sentence, or paragraph, I immediately find myself searching for patterns and hidden meanings in the text. Perhaps there is a higher being that slips these hidden messages into the writings of humans and entertains itself by watching us puzzle over them. Every aspect of writing has special significance for me: I scrutinize sentence structure, capitalization, and even the spacing between words to see if I can extract another meaning from the combination of letters that lies before me. Couldn’t every sentence in existence arguably have been created by the proverbial monkey on a typewriter? Why, then, should there not be multiple meanings to every supposedly random sequence of letters and words?

Gnikaeps sdrawkcab si rehtona tibah fo enim (speaking backwards is another habit of mine). By challenging our perceptions of the English language, I believe it is possible for humans to expand their linguistic capabilities. Words shouldn’t be interpreted linearly; they can take on multiple meanings, even beyond those of synonyms. My habits of rearranging, reorganizing, and reversing words have unquestionably strengthened my command of the English language. I can instantly glean certain facts about any word, including the number of letters it contains, most of its possible anagrams, and what it sounds like backwards. Believe it or not, these peculiar practices have helped me to recall the definitions of words more quickly and better guess the meanings of words I don’t yet know.

My experiences in mathematical logic and cryptography courses taken through Johns Hopkins University's Center for Talented Youth program one summer formed my initial interest in the field. The final exam for my cryptography class consisted of an all-day scavenger hunt that trailed through the campus's bookstore, cafeteria, and library. The journey culminated in my group's excursion to the bottommost floor of the library, where we found and cracked a cipher detailed in Edgar Allan Poe's short story, “The Gold-Bug.” This process of analytical thought and gradual discovery is what intrigues me about the field of cryptography, and has inspired me to prepare for a career in cryptanalysis by researching in mathematics, computer science, and linguistics as an undergraduate. A few years from now, if you stop to wonder who ensures the security of your e-mails, or to curse the aggravating puzzlemaker who wrote that cryptoquote you can't solve, it might just be me.

Because many different fields can lead to a career in cryptanalysis, I feel I would be able to pursue meaningful research and prepare for my field in a number of different Carnegie Mellon schools. My ideal study would be a Discrete Mathematics and Logic Concentration at the Mellon College of Science; the research opportunities offered to undergraduates at MCS would adequately prepare me for graduate work in cryptography before entering the workforce. Alternatively, a Bachelor of Science in Computer Science degree from the School of Computer Science, in addition to a minor in Linguistics or Language Technologies, would also ready me to pursue cryptanalysis. Lastly, studies in English and Linguistics at the College of Humanities and Social Sciences would give me the strong background in language necessary to analyze, create, and destroy ciphers.

# The Impact of The West Wing On Me Anonymous

## Describe a character in fiction, a historical figure, or a creative work (as in art, music, science, etc.) that has had an influence on you, and explain that influence.

During a trip to the US, my father brought back a boxed set of The West Wing DVDs. While I planned to watch them during my school holiday as amusement, the show instead became an obsession and an education in itself.

My greatest passion has always been politics and global issues. I have a keen interest in joining the political process in my own country, India, and I see myself as a person concerned about the issues of the world at large as well. This zeal has existed in me for a long time, but it was in 2006 that I began to truly understand my passion. I attribute this to many things: reading books, newspapers, and magazines and talking to people who feel similarly (or radically differently!). But nothing has given me a better understanding of the deeper issues and the effects of politics than, strangely, The West Wing and its core characters.

The series deals with a Democratic administration led by an economist-President, and offers a glimpse into the workings of the White House. Delving into the relationships between the President, various senior staff members of the West Wing, Senators, lobbyists, foreign leaders and journalists, it is a political junkie’s delight. However, it offers me something more. It reflects my image of an ideal government. The show portrays committed individuals, idealistic and yet practical, who always have their country’s best interests in mind. Though this can be mocked at as a utopian dream, it realistically blends this fantasy with a very realistic world of discord and compromise. It embodies the notion that politicians can be intelligent, honest and honorable while at the same time remaining flawed human beings.

Another feature of The West Wing that appeals to me is the exploration of complex domestic and international issues from a liberal viewpoint very similar to mine. The show’s thorough dissection of global problems such as terrorism, nuclear proliferation and foreign policy has peaked my interest to the extent that I have carried on to learn more about these issues through other sources. I attach great importance to the sustainability of the environment, and the fictional administration’s ardor toward this issue indicates a welcome alternative, albeit fictional, to the environmental policies of modern governments. The West Wing engages me far more than the average television drama by actually involving debate about our pressing problems and positing pragmatic ways in which these problems might be tackled.

In the recent past, I have engaged myself in various tasks connected to politics. There is a terrible lack of accountability among politicians in my country, caused in large part by the paucity of accurate data pertaining to elected representatives. I work extensively with a non-governmental organization in my city, Bangalore, to find and make available accurate and verified data regarding the constituencies represented, the margins of victory and the assets of elected representatives in my state. Publishing the assets of a politician is especially satisfying, since the public in a country so riddled with political corruption like India ought to know the sources of their leaders’ wealth.

The West Wing itself inspired me to get actively involved with an election campaign. For two weeks in mid-2006, I volunteered to join the campaign of a maverick politician running for a seat in the legislative council of my state. Highly educated and possessing great integrity, he seemed to me a one-of-a-kind statesman, removed from the appalling political climate of my state. My task was to campaign over the telephone to numerous constituents. Despite the fact that the politician ultimately lost, the conversations I shared with these constituents truly inspired and encouraged me.

Though The West Wing is set in the United States (a developed country whose problems are fundamentally different from the problems of a developing country like my own), it still offers great lessons applicable to issues in India as well as the rest of the world. This American television series has not only bolstered my passion to join politics but also taught me an important life lesson. I have realized that while the world order necessitates pragmatism, idealism and vision must also be present. As The West Wing’s President says to one of his advisors, “Never doubt that a small group of thoughtful and committed citizens can change the world.” To which the advisor replies, “It’s the only thing that ever has.”

# Red Team Inspiration Kevin Zhang

## Please submit a one-page, single-spaced essay that explains why you have chosen Carnegie Mellon and your particular major, department, or program. This essay should include the reasons why you’ve chosen the major, any goals or relevant work plans and any other information you would like us to know

I will admit: computer science has not always fascinated me like it does today. As the son of a software engineer, I did not find take-your-child-to-work day particularly appealing. Seeing my father constantly work on the computer had given me a distorted view of what “programming” encompassed: sitting at a computer and typing about on a keyboard. Additionally, my ignorance towards the area had slowly dragged computer science down my list of interests.

Fortunately for me, my prejudice towards computer science did not persist. A turning point of my interests occurred early on in high school: more specifically, during my first encounter with Carnegie Mellon. Science channels were my preferred programs to watch on television as a young student, and PBS’ NOVA became one of my favorite series. One afternoon, in what seemed like a typical episode of NOVA came the birth of my new enthusiasm for computer science. Before me was the airing of “The Great Robot Race.” It was an episode on the DARPA Challenge of 2004 and 2005, and Carnegie Mellon’s Red Team, lead by Dr. William Red Whittaker, was the featured contestant.

Like during all my other viewings of NOVA, my eyes remained glued to the screen during the entire session. The display of robots fascinated me. As the driverless vehicles navigated the terrain, I felt a sense of “spirit” being born into the machines. Each automobile seemed to have developed its own personality of sorts. In such a significant event in history, the Red Team had impressively achieved top three with both its vehicles, H1ghlander and Sandstorm.

The entire episode was inspiring to watch and further bolstered my fascination with creative machines. However, the scene that had struck me the most was that of Red Team’s programmers each “sitting at a computer and typing about on a keyboard.” Immediately I tied the image to my dad at his work. A strong, yet dumbfounding, realization had struck me: software was more than just the familiar Microsoft Windows and Mac O.S., it was the life-water of the robots that have fascinated me all these years. It was what lay at the heart of the machines. By crunching large amounts of zeros and ones, a computer could emulate the behavior of intelligent beings, and that was what excited me the most. Such a realization compelled me to further explore this area, and thus, I took the challenge of directly enrolling in my school’s A.P. Computer Science AB course without prior computer knowledge. This involvement ignited my passion for computer science. Soon, the keyboard was no longer a mere tool of producing text, but a gateway through which I could “teach” a computer the art of problem solving. As I became more and more accustomed with the creative process of programming, I realized how limitless the potentials of software truly are.

Math and logic, my strong points, became an integral part of my work. I learned that as my knowledge evolved, so did the finesse of my programs. Excited by the many possibilities of software, I proceeded to creating many of my own programs outside of school. From my first “Hello World” program to my eventual undefeatable tic-tac-toe A.I., my hunger for creation showed no signs of letting up. Determined to take my education to the next level, I signed up for two essential computer science courses at none other than the school that first inspired me, Carnegie Mellon.

From my six-week life at CMU, I have become very well acquainted with the university, its program, and my two wonderful professors. Because I had only 9 months of programming experience prior to my classes, 15-211 proved to be a very challenging, but equally rewarding, experience, laying a solid foundation for me in this field. The AP/EA program allowed me to experience firsthand the uplifting atmosphere and diverse culture at Carnegie Mellon. The small, beautiful campus accompanied by the dedication and accessibility of faculty members provided an unparalleled learning experience. These six weeks were an important milestone in my life, helping me to strengthen my decision to partake in computer science for a future career and to confirm Carnegie Mellon as my first-choice college.

From NOVA to Pre-College, Carnegie Mellon has held a special place in my heart. The school’s recognition in prestigious events such as the DARPA challenge and future goals in the Google Lunar X-Prize only further excite my ambition to become part of such an amazing team. If given the honor, I will continue my education in Carnegie Mellon’s world-renowned School of Computer Science, focusing in the Robotics Institute Division. To attack the world’s many problems in robotics, working alongside Dr. Whittaker himself, is my ultimate dream. To attend Carnegie Mellon is my catalyst.

# My Passions Brett Cooley

## Why have you chosen to apply to the Carnegie Mellon College of Science?

I have chosen to apply to the Carnegie Mellon College of Science, the Mathematical Science department, because I have a passion for learning that I want to apply to mathematical principles as they pertain to modern internet security. It is my goal to receive an undergraduate degree in Mathematics, and then continue on to receive a doctorate concentrating on cryptography as applied to internet security. I have many other passions in addition to math, the most significant ones being film-making and athletics, but I will stick to discussing those two though, in consideration of your time and my one page limit.

I love to learn. That’s a simple statement, but it’s true. Regardless of the subject, I take pleasure in acquiring knowledge. This is especially true in mathematics. I love the problem solving aspect of math, my favorite problems being those that closely mirror real-life applications of the concepts being taught. It excites me to be able to figure out problems that professionals in that field do every day. Specifically, cryptography interests me because the whole field is dedicated to creating, testing, and critiquing a big “puzzle” of sorts. Since I want to continue into this field, mathematics would be the best major. This is the main reason for applying to the Mathematical Science department. It isn’t the only reason however. I have always liked math, and have shown that throughout my high school career. Currently taking a Linear Algebra course through Stanford’s EPGY curriculum, I very much enjoy the aspect of solving multiple linear equations via matrix manipulation. It is very much like a puzzle, and if math at that high of a level can still be fun, and in some ways more fun than early math was, I am confident that I will continue to enjoy math for the duration of my college career.

My goals to receive an undergraduate degree along with a doctorate are fairly long-term goals. However, because of my passion to learn, I am truly looking forward to the journey to a doctorate. Part of this journey includes making sure my undergrad degree is a solid foundation for my graduate work, which can only be achieved at a high-caliber university. Carnegie Mellon will help make that goal a reality, which is why I am applying. The reasons for my goal of receiving a doctorate mainly revolve around my desire to learn as well. The idea of a long-term research project on a topic of choice is one that I think would be immensely exciting and challenging, but also quite fun.

Mathematics isn’t my whole life, however. I have many, many other interests that I actively pursue. One of my other passions is any athletic activity. I love to be active, and have been a two-sport athlete my entire high school career, playing both football and baseball. In addition to playing these, I have lifted weights my entire time in high school, including summer lifting and conditioning for football. Another passion that I have just recently found is film making. I enjoy it as a very different outlet for my creativity than I have previously had. As a sample of some of my work, I have put some videos on my YouTube account, which can be accessed at www.youtube.com/BCTurk.

My passion for learning, which I will focus on mathematical principles, is the driving force behind my submission of an application to the Carnegie Mellon College of Science, Mathematical Science department. Thank you for your time and consideration.

# Robotics Brainstorming Mark Ulrich

## Evaluate a significant experience, achievement, risk you have taken, or ethical dilemma you have faced and its impact on you.

Waving our banner wildly, we counted down the seconds, not at the homecoming game, but rather the 2009 FIRST Robotics Competition Kickoff. With only six weeks to build, wire, and program a 120-pound machine, my team jumped headfirst into brainstorming. Our options included a robot that hoarded the purple and orange Moon Rocks, shot them into enemy goals, or rolled them into air locks . . . with unlimited mechanical and software solutions for each strategy. As captain, I led the brainstorming effort and concentrated on getting everyone’s ideas on the table while also keeping discussion moving forward. We soon narrowed our options down to two strategies: one an elegant ball dumper, the other a superlative shooter.

“Our team has never been more prepared to shoot for the moon.”

“A rotating turret will present a significant technical accomplishment."

“None of the other ‘bots will know what hit them.”

The idea of a shooter inspired my teammates, but I knew a simpler robot could score faster by dumping many balls simultaneously.

That night I struggled to decide if I should aggressively advocate for the more effective strategy. I dialed a few teammates and heard the excitement in their voices when they discussed the shooter. I paced endlessly and reflected on my experience with robotics, a passion I had pursued since joining Lego League in 5th grade. I had joined the Southwest Robotics Team during its rookie year in 2006. At the beginning of my sophomore year, when I became the head captain, we had only six members including myself. Now we had 26 members and a network of mentors and sponsors; we had raised over $45,000. I had worked with the larger FIRST community to test a new control system and taught programming seminars for FIRST members at Washburn High and the University of Minnesota. To interest potential young inventors, I had organized demonstrations at public high schools and The Bakken Museum of Electricity and Life. FIRST Robotics meant more to me than a competition; it brought together and inspired people to produce innovation.

Perhaps I could have prolonged discussions, swayed others to my opinion, and my team would have reluctantly built a simple, effective robot. But after weighing the relative merits of process and product and the crucial importance of team dynamics, I embraced the strategy that would generate enthusiasm on the team, wow the crowd, and score sporadically.

That build season we had more fun than ever before. We challenged ourselves to find innovative design solutions to the inherent complexities of lofty strategy. I led the programming effort to become one of a handful of teams able to autonomously track the moving targets and differentiate between friend and foe using the onboard camera. The robot looked magnificent; everyone competed for the chance to drive it. We were proud of our accomplishment.

At the North Star Regional, our members rushed around the pits, offering technical support to less experienced teams and telling everyone about our robot. The two-person drive team struggled to control our robot’s many spinning sprockets and whirring wheels. Although simple ball dumpers outscored us and advanced to Nationals, my decision to look at the bigger picture instead of game details unified our team, and everyone moved forward with a better understanding of strategy for future years. At the awards ceremony the announcer read, “The judging panel may encounter a team whose unique efforts, performance, or dynamics merit recognition, yet doesn't fit into any of the existing categories . . . [The Judge’s Award goes to Southwest Robotics] for their exceptionally strong system design and true team spirit with a positive refreshing attitude.”

# A Surprising Role Model Anonymous

## Describe an experience you have had, a person who has influenced you, or an obstacle you have overcome. Explain why this is meaningful to you.

I could feel the tears coming. My brother’s words pierced me like bullets, one by one, slowly overpowering my determination. I turned to face him and cleared my mind. After receiving the ball, I noticed him hesitate slightly and on instinct I started dribbling towards the basket. Unfortunately, he reacted just in time; momentarily after the sure layup sailed into the air, it came right back down. More trash talk ensued. I was about to explode at any moment. He bombarded me with insults, “You think you would EVER have a chance to make the middle school basketball team? Would they even let you try out?” The hateful words came in a barrage. I ran towards the steps without hesitation and locked the door behind me. My brother was left outside in the cold for the next half hour before I finally let him in.

Believe it or not, my brother has been a role model for me throughout my life. He had his own “creative ways” to teach me lessons – his trash talking caused me to be a stronger person. My confidence grew not only with basketball, but also with all other parts of my life. After that incident, no words could pierce my new suit of armor. My brother is a very strong individual. Although I was just a baby when my family emigrated to America, my brother was twelve years old, and he did not fit in at school. Regardless, he tried to find new friends and even joined the baseball team even though he did not know a single person on it. I admired my brother’s courage when he told me his painful memories years later. My brother also inspired me to pursue new interests, no matter where my natural level of talent lies. “Don’t worry about those around you; reach your own potential; and then exceed it,” he told me. His advice shaped many of my future interests as well as my approach to challenges I encountered.

For example, I have been playing guitar for five years. Although my technique on the guitar has grown substantially since I began learning, my vocals have lacked. In the past, even the thought alone of singing in front of a crowd has been enough to persuade me to pass up the opportunity. I soon realized that my fears only placed me on a never-ending path to failure; my true passion for music drove me to face my weakness. Over the past few summers at a camp, I played and sang for a crowd of a few hundred people without any hesitation. My brother’s advice helped me realize that there is no ceiling to anything I do; I can only create a ceiling inside my own mind.

My brother encouraged me to pursue many other interests in addition to guitar. As I watched my brother win consecutive national chess championships, I was fascinated and took the game up from an early age. After I learned the crucial elements of perseverance and patience, I won two state titles of my own. Computer Science is my intended major, just as it was my brother’s. I became obsessed with computer coding after I discovered how much math was involved. I could hardly wait for my brother to return home so that I could show him the new game I had programmed on my TI-84 Silver Edition.

Every time that my brother visits, a game of basketball is inevitable. We play to our peaks, neither of us succumbing to the other’s trash talk. I become more like my brother with every passing day. Even when he is not around, his ideas linger in my mind. My brother has not only influenced me in the way I live my life, he has also influenced my passions and everyday actions.

# His-story Avishek Ganguli

## What really is history?

Reading this prompt made me share a wry smile with myself. It reminded me of a moment from twelve years ago when my childhood simplicity helped to change my perspective on life in an enduring manner.  My parents were having a conversation in the car and I, for the first time, recognized the word “history”. I had read a few books by then and had grasped the concept of a "story" already. But what was this “history” that they kept mentioning? With all the brusque rudeness of a curious four year old, I asked “Whose story, mom?” My mother was noticeably irritated with my unwarranted interruption but was taken aback by my unusual question. “What story?” she replied. Now I was the one who started getting irritated with my mother’s apparent lack of attention to the conversation. “You just said his story. So whose is it?” Now she understood what I had meant and burst into laughter. She then gave me a thorough, or as thorough as can be for a four year old child’s understanding, explanation of history and what it meant.

Obviously I paid little attention to that moment back then as many other things caught my wavering attention. However, the repercussions of that observation stayed with me throughout my childhood. As I grew older, fiction alone ceased to satisfy my reading needs, and I shifted over to history. The more I read, the more my innocent mistake seemed more and more appropriate. History wasn’t necessarily the truth. It was all too often “his story.” To me, the identity of this mysterious “he” was obvious. It was the victor. Perhaps wars weren’t fought for anything as clichéd as land, love and honor. Perhaps they were fought for the right to rewrite history, the right to make one's subjective version of events the “truth”.

The most crucial example of this comes from my own culture: the Indian epic Mahabharata. Often dismissed as mere mythology, the tale can be more appropriately described as an imaginative description of the Kurukshetra War and the events that led up to it. A simplistic account is as follows:

The Pandavas, the protagonists of the epic, are the 5 sons of King Pandu while King Dritarashtra, the blind elder brother of King Pandu, fathered the 100 Kouravas, the antagonists of the story. However, a curse forces King Pandu to leave the Kingdom of Hastinapur, leaving complete control of the land to his brother.  When King Pandu dies, his sons return to Hastinapur to reclaim their inheritance. However, the Kouravas resent their presence and propose a gambling match to decide who are the better players. As the Pandavas continue to lose, they even gamble away their kingdom and their wife. After this match, they are exiled from Hastinapur for 12 years. When they return the eldest Kourava, Duryodhana, refuses to give back the land they had won, signaling the start of the 18-day war. After their victory in the war, the Pandavas take over Hastinapur as the rulers of the kingdom. Even though history treats the Pandavas as the victors and heroes of the war, is it morally correct for a man who gambled away his kingdom and his wife to become the ruler of any land? Obviously, such a person is not responsible enough to hold the lives of thousands in his hands. It is also important to note that Duryodhona won the kingdom fairly in a match of dice and therefore the Pandavas have no right, whatsoever, to reclaim the kingdom. As the victors, they are still given the right to rule the kingdom and more importantly for contemporary people, the power to rewrite history on their own terms, a history where 5 Pandavas won against 100 Kouravas. This is a victory against overwhelming odds won with wit and cunning, not the story in which a man gambles away his kingdom and wife and wins them back using underhanded means and unfair trickery.

The dream for any prospective inventor like me is to cement one’s place in history. Unfortunately for all visionaries, dreams are rarely the property of solely one person and history is a fickle beast. An inventor who exemplifies this is Elisha Grey. Grey’s reluctance to apply for a patent and quickly gain credit for his invention led to Alexander Bell being able to submit his patent and pay the fees before Grey did. It is, in fact, the belief of some historians that Bell may even have copied Grey’s invention through illicit means such as bribery. The truth cannot be deciphered from the available evidence but what remains obvious is whose name is enshrined in history and whose name is forgotten. Bell’s popularity ensured that his rival and his other numerous significant inventions such as the teleautograph, a primitive fax machine, the musical telegraph which formed the basis of the synthesizer and the telephote, a machine which functions similarly to the modern closed circuit television were downgraded to obscurity . In this way, a destined-to-be-famous inventor with over 70 patents missed out on his chance to stand in the pantheon of history along with his rivals Thomas Alva Edison and Alexander Graham Bell. In this case, history is told exclusively from Bell’s perspective with barely a few mentions of Grey. Bell, intentionally or not, overwrote Grey’s influence on the technology of that time and relegated Grey to the dark abyss of ignominy.

It is those who succeed who are given the right to write history. They decide the vox populi and they shape the present and the past. But the question is, if “those who fail to learn from history are doomed to repeat it,” as Sir Winston Churchill said, then will we ever learn from our mistakes? Hasn’t the future already been decided? After all, his story is hardly the truth.

# Why CMU? Anonymous

## Please submit a one page essay that explains why you have chosen your major, department or program. This essay should include the reasons why you’ve chosen the major, any goals or relevant work plans and any other information you would like us to know. If you are applying to more than one college or program, please mention each college or program you are applying to. Our Admission Committee reviews applicants by college and programs and the essay can impact their final decision. Please do not exceed one page for this essay.

My mother’s rehearsed speech about how “Tiffany became interested in business because I took her along to see my financial advisor” is not entirely true. Although I found my mother’s financial consultation sessions interesting and felt flattered when her advisor offered me an internship, my interest in business actually began with my involvement in Kiva, a microfinance organization.

I started making monthly loans with my personal savings and income from Cosh(ex), my calculator program startup. In three years, I watched $342 multiply with ease to $750. The personal side of microfinance is even more impressive than its numerical aspect. In two years, I watched Kiva expand its influence in higher education. To date, 77% of my loans are to education, which is the ticket out of poverty and the solution to discrimination—the ultimate cure-all. Not coincidentally, I am applying to the Tepper School of Business, a school focused on solving global problems, for higher education. Although there is no microfinance club at Tepper, it does have the Undergraduate Entrepreneurship Association, where I hope to gain hands-on experience before ultimately becoming a social entrepreneur.

Another way I hope to make a difference is through improving the very new field of neuroprosthetics. I would love to participate in this frontier, with the academic background of cognition and the skills of a business manager. For years, my mother tried to get me started on the stock market, but instead, I started my own calculator program business, which I believed would bring more value to the world I live in. Through Cosh(ex) Calculator Programs, where I code for and organize a team that sells academic and gaming calculator programs, I experienced the important and fun role of business in tech companies. Programming was thrilling, but what I experienced beyond writing programs is what made my activities truly unique.

Shortly after I began showing off and giving my programs to my friends, I realized that many other students beyond my community wanted access to my work. I decided to turn my hobby into a business, targeting students who couldn’t write their own programs. I developed the business model, organized a team to help me distribute the programs, and designed the website. Through Cosh(ex), I finally understood the quote, “Entrepreneurs don’t need sleep.” The greatest takeaway, however, was that though integrating computer science and business was rewarding and fun, there was a disconnect between what I could do with computer science projects and my interests in philosophy, cognition and behavior. I thus found cognitive science and neuroscience, which appeal to more of my intellectual interests, personal experience (I nearly experienced amputation in third grade), and passions. This was how I arrived at my lifetime goal of directing a neuroprosthetics company.

Tepper’s academic structure provides a highly quantitative and analytical managerial background and also allows me to pursue the integration of management and technology under its Business Technology specialized track. Additionally, Tepper’s Business Technology Club, Undergraduate Entrepreneurship Association, and the Tepper Venture Challenge give me the chance to apply my academic knowledge in real life, as well as complement my focus on solving global issues with a culture of technological innovation. Likewise, the Dietrich College of Humanities and Social Sciences economics major would help me attain the managerial expertise required for becoming a social entrepreneur and directing a neuroprosthetics company, while the Mellon College of Science’s neuroscience major would give me the academic expertise to oversee specific developments in mind-controlled prosthetics.

# The Accident Anonymous

## Some students have a background, identity, interest, or talent that is so meaningful they believe their application would be incomplete without it. If this sounds like you, then please share your story.

"This is a nightmare," I thought. Sean was on the ground wincing in pain and blood was slowly leaking through his spandex. A million things raced through my mind but I stopped, took a deep breath, collected my thoughts and got to work. Sean had been thrown off his bike by a sharp, concealed rock. It was the first time something had gone terribly wrong while I was mountain biking. I called 911, made a sling out of my shirt to support his broken arm and carried him to the road. To my relief paramedics were already there.

The trails I ride have long winding turns and portions that are extremely technical. Multiple fast-paced sections require me to make split-second judgments. Every right decision bolsters my confidence and motivates me to try more challenging terrains. Failure to make the correct decision often leads to injury, as happened with my friend Sean.

Mountain biking is by no means a solo sport; it helps foster relationships between groups of people. It trains people to be dependent on and look out for each other. When a friend falls down or takes a wrong turn everybody stops. This extends to the surroundings as well. As we take care of each other we also work together to take care of the trails on which we ride. Leaves are raked, trees are replanted, and garbage is removed.

Perhaps, the best word to describe the view while riding a trail is, simply, a blur. Racing in 15th gear, I can only make out the biggest obstacles. Like a vision tracking algorithm, my brain sorts out objects and maps out a safe path for me to take almost instantly. On the trail, the occasional bug flies into my mouth but my full-face helmet does a good job of mitigating this - at the cost of my face burning up. The backsplash of riders in front of me always seems to spray thick mud in my visor. My muscles constantly scream to give up but the adrenaline rush of steep drops and tight maneuvers pushes me onward. I know I will need this determination to face the all-nighters that college will inevitably throw at me.

My mother continuously reminds me of the awe she saw in my eyes when I received my first bike as a birthday gift. I would not get off it until I had explored every corner of my neighborhood. I believe that the spirit of mountain biking embodies itself not only in the precision and technicality required, but also in the curious and exploratory nature of the rider. Although I start on a conventional trail, taking the left turn that leads nowhere is a choice I often make. Following my instincts has brought me to abandoned campsites, undiscovered springs and places that I go to get away from it all. I am no longer afraid of the unknown; if I have not defined my own path, then I do not feel my ride was a success.

A truly multidimensional activity, mountain-biking encompasses all my interests and more. My passion to innovate, to constantly improve, is reflected in minor tweaks I consistently make to my bike. Long nights in the garage shaving down unnecessary 6061 aluminum finally paid off when I made an unofficial track record on a local trail. Greasing gears, tuning suspensions and barreling down a rocky path on a mountain bike help me escape from the sometimes overwhelming world of microprocessors and LED displays - a world with which I find myself more and more intertwined, until I hit the trail.

# The Balcony Anonymous

## Describe a place or environment where you are perfectly content. What do you do or experience there, and why is it meaningful to you?

This is the balcony that extends into infinite dimensions. Inside: paintings and the smell of dusk. Lined against the tiled walls are canvases both void and filled. A soft light overhead. There is something extremely calming about occupying this platform, transforming it into surreal dimensions. In the studio I am expanding both into my mind space and the concrete space of my artwork.

Very often, a friend would read my poetry, view my paintings, and ask: what was your inspiration? What draws it all together?

I am never really sure how to answer. To be honest, I have never found any conceptual disparity between visual art and the written form. My urge to create, or express, is like letting out a breath of air. And by creating art, I am able to crystallize that exhalation and preserve it forever. When I paint, language and brushstrokes coalesce into the same motive: to translate my cognitive abstractions into concrete expressions. To tentatively let you into my mind space, this is the trance-like state I fall into when creating: the sky is a stretch of watercolor spreading into little streams, telegraph poles streamlining my ideas into electric currents, reverberating into houses; electric wires gone loose. And beside the overarching landscape, materializes the side portrait of my mother. The silhouette of a slender arm, then the shoulder's precise curvature.

Some people say that art is cathartic. That statement is only half-true. In the very beginning, creating each artwork is like wrestling forever with an unknown contender who seems to come from the realm of artistic perfection. Even when my artwork is finally polished and displayed under the glowing light of art exhibitions, I am not lost in the applause. Interlaced with each brushstroke and each nuance of color is the memory of a self-limitation I've been able to conquer. Thus, out of all the artworks I've ever made, the ones I value the most are not necessarily the most aesthetically successful, but are the ones in which, like a war hero, I battled through to claim victory. In those rare, precious moments, when transfixed by the wild waltz of my imagination, I would feel as if I've reached the apex of divinity. Existing in between the initial concept and the unclaimed, unchartered space of the blank canvas, I've never stopped believing that a secret awaits--perhaps the truth to the wholeness of life, the interconnected beauty of the entire cosmos.

The balcony door opens: I step away from its light, covered in paint. But I do not hurry to wash the colors off my skin. Instead, I let these chaotic remnants of my arduous creations stay, because after hours upon hours inching towards an artistic ideal, my body becomes at one with these brushstrokes, and I am no longer alone.

# Global Passport Anonymous

## Some students have a background, identity, interest, or talent that is so meaningful they believe their application would be incomplete without it. If this sounds like you, then please share your story.

There I sat, an American-born Indian boarding a flight to Guatemala with Japanese anime loaded on my phone and a Wheelock’s Latin textbook in hand. At only 15, I was somewhat culturally aware, but I felt culturally confused. My skin said I was Indian, my heart belonged to the children in Guatemala, my mind spoke in Japanese, my intellectual drive was fueled by the Roman literature, and my roots were in America.

**“Cogito”**, or thought. My interest in world cultures drove my passion in everything I did. I studied Latin in order to understand the minds that set the foundation for the western world we know today; tales of Remus and Romulus governing Rome drew me to student leadership, where I sought to improve representative government. I spend hours dissecting each new culture, and grow as a person with every new ideology I encounter.

**“Sonkei”**, or respect. Having hosted over 25 Japanese exchange students, I drawn to the principles of hospitality. I applied these principles not only to other people, but also to my disciplined approach to academics. As a member of a biology lab at UCLA, I worked alongside PhD students, assisting in experiment design, running data analysis, and genotyping test subjects. Although it was intimidating working with students who had been in school longer than I had been alive, I constantly implemented a work ethic that honored my mentors and the work we were doing. It was this attitude that broadened my understanding of what science entailed. Science wasn’t memorizing definitions or pipetting solution, but developing a complete view of the task at hand and having the discipline to search for answers that aren’t always present.

**“Devolviendo”**, or giving back. As a sophomore, I traveled to rural Guatemala as a dental assistant in a clinic that provides dental care to orphans. For so long, I had merely read about challenges in public health around the world, but this experience reminded me that behind each statistic was a real person. The thought of these children remained embedded in my mind. I knew I wanted to continue helping even if I was not physically present, so I conducted research examining natural oral hygiene sustainabilities in Guatemala. Subsequently, I was selected to publish my research in the “International Journal of Innovation and Scholarly Research”. After completing my initial paper, I wasn’t satisfied with simply writing about my findings. I continue to use my research to develop a plant-based product that I will implement in Guatemala.

These three ideals, like the cultures they represent, can interlock. I employ “cogito” to delve into our current problems with the knowledge of generations before me. “Sonkei” reminds me to approach every situation with a level of respect and practice humility in order to continue to grow. As I continue to study, I know that my end goal is to use this knowledge to “devolviendo”. As I face the issues of our flattening landscape, both socially and academically, I consider myself a student of the world.

# Aerospace Aspirations Anonymous

## Please submit a one page, single-spaced essay that explains why you have chosen Carnegie Mellon and your particular major(s), department(s) or program(s). This essay should include the reasons why you've chosen the major(s), any goals or relevant work plans and any other information you would like us to know. If you are applying to more than one college or program, please mention each college or program to which you are applying. Because our admission committees review applicants by college and program, your essay can impact our final decision.

With my parents beside me, I stepped through the door and onto the flight deck of the USS Intrepid aircraft carrier. Immediately, I was surrounded. Military aircraft from all through history glistened in the sunshine, just waiting for me. Each aircraft was unique, yet one aircraft in particular captured my attention and refused to let it go. The largest aircraft at the museum, the A-12 Blackbird stood alone in the corner of the flight deck. Its midnight color and aerodynamic fuselage captivated me. The A-12 boasted a design dissimilar to that of any plane I had seen before. Its forward fuselage made up half of its length and its stealthy profile had no protruding parts. Face to face with the aircraft, I grew hungry for knowledge. I wondered about its very existence. I wanted to know how it worked and how it was built. From that moment on, I began to feel certain that understanding these mechanical contraptions was my calling.

Carnegie Mellon is, for a future aerospace engineer, the ideal university, a place where research comes alive. For the remainder of my academic career, I hope to obtain a PhD in Mechanical Engineering with an emphasis on aircraft optimization and design. I believe that it is an atrocity that quick travel around the world is possible, yet is a luxury unaffordable to most. I hope to fix this situation by reducing the costs associated with air travel by eventually starting my own company and producing aircraft that are cheaper and more energy efficient. The world is here for us to explore. No one should be burdened by costs that make it prohibitive to visit family or to go on vacation across the globe. Taking advantage of Carnegie Mellon’s Engineering-MBA Integrated 5-year Program would allow me to best accomplish this business and engineering goal.

The Carnegie Institute of Technology offers both specific assets and a broader atmosphere that fit my academic needs. Within the expansive curriculum for Mechanical Engineering, one course in particular interests me the most. Taught by Associate Professor Jeremy J. Michalek, Decision Tools for Engineering Design and Entrepreneurship will provide me the basis and knowledge of design optimization. Without this initial foundation, I cannot begin conducting my study. Through the Summer Research Fellowships, I would cherish the opportunity to conduct research under the guidance of Professor Michalek and refine my ideas into tangible results. Having written over eighty publications on design optimization and headed the Design Decisions Laboratory, the main facility I would use for my investigation, Professor Michalek would be an excellent mentor for my research. But such mentors would abound in my new studies. In addition to the Design Decisions Laboratory, the Carnegie Institute of Technology offers many other facilities such as the Doherty Hall facility and the Engineering Design Research Center, allowing me to delve into research topics such as materials and aerodynamics in my overall quest of aircraft optimization.

Upon obtaining my PhD, I would use the information I collected in aircraft optimization to open my own company and bring my data to reality. A Master of Business Administration degree from the Tepper School of Business would give me the best opportunity to accomplish this. The elective classes in management and entrepreneurship, in addition to the core curriculum, offer me a strong base in starting an independent enterprise. Specifically, the Integrated Product Development course mirrors my goal in guiding students through the product development process. Through this class and under the direction of Professor Jonathan Cagan, I will get a taste of what it will be like to market my own aircraft in the future. From experiential learning to venture capital exposure, the Tepper School of Business will ultimately benefit me and my aspirations.

# Containing Multitudes Serina Lee

## Discuss an accomplishment or event, formal or informal, that marked your transition from childhood to adulthood within your culture, community, or family.

A scrawny boy in beat-up velcro sneakers ran past. Our tour guide Mohammed sighed heavily, “Angel Park is probably the only place where a young boy could be young. Outside, he's probably the head of the family, working three jobs to secure meals for his sisters, because his parents are in jail or killed.” I thought of my twin brother slouching comfortably on the sofa holding an Xbox controller, and knowing that mom is cooking steak for dinner.

Honestly, when I signed up for the Social Justice Academy at the University of Pennsylvania, I was anticipating lectures on broad topics like racism and feminism and probably a few interesting reads. So I was really nervous when we toured Eastern State Penitentiary. One former inmate, Jesse Krimes, informed us of how the government inflated his crime on the records to pressure him to snitch. He also showed us the intricate, slightly faded landscape on his prison wall, made by years of gathering magazine pieces and pasting them to form a design, partly to avoid losing himself in solitary confinement.

The amount of shame I experienced was unspeakable, because the night before I imagined the inmates as insane men; I had plotted to wear baggy clothes and hide my phone from them, all because of my own prejudice and ignorance. I realized that many of them are normal people with soft spots in their hearts, who will always be judged by one crime committed when they were young and headstrong. Is it fair? “Don’t fight fire with fire, fight fire with water,” as the play Hello! Sadness puts it. If we are fighting criminals by harming them psychologically with isolation and prejudice, we are essentially forcing them to remain criminals. There must be a less divisive way, one that encourages reform.

On the way back, I conversed with Professor Tony Montiero about the racism in the criminal system, the injustice of solitary confinement, and the idea that progress under new laws is a mere illusion if nothing within the culture changes. I’m beginning to grasp that these issues are interconnected, and I can’t consider, for example, sexism without pondering its similarity to racism.

These thoughtful conversations, with professors and friends, were the fuel of my growth. I cherish these conversations, because they made me reflect, intensely. They made me more aware of how fortunate I am and of the responsibility that comes with growing up privileged.

During the last hours of the academy, some friends and I gathered for the usual goodbye. But there was more. I mentioned that I would incorporate elements of other injustices like sexism and racism into the homelessness project I started last year and foster the open and non-judgmental community we found at academy. Hannah will start a Feminism Club in her Quaker school. Stephen shared ideas on starting a gay rights rally in his school. As more of us shared, power and mutual support were built. I left with the weight of my newfound sense of responsibility and thirst for thought-provoking conversations. I am forever grateful for this summer that, as Walt Whitman writes, “contains multitudes,” because I learned to connect with people, connect with their knowledge and problems, and connect with their kindness. I gained the maturity to utilize these connections not just for myself, but to impact people in need.

# Dreams Anonymous

## Discuss an accomplishment or event, formal or informal, that marked your transition from childhood to adulthood within your culture, community, or family.

It’s 3:16 A.M.

My eyes are bloodshot from sleeplessness; I stumble into my room and crash my head against the soft, plush pillow laying on my bed. I pull the blanket over my head and close my eyes, trying desperately to get some sleep before the sun rises. In the fleeting moments before I pass into deep slumber, my mind is finally free to wander after an arduous day filled with school and work. My thoughts stream in a blurring sequence of images, each of which help me recall what I learned and experienced in the day. My mind races between the Lakers injury report I saw on ESPN at the breakfast table to the article I read on my iPhone about the future of nanotechnology between classes. My mind then flashes to the Socratic Seminar I presided over as President of my school debate team and then to new piece I learned from my Tabla guru. Combining that with the unfamiliar faces at school, the new Drake song on the radio, and the universal grumble about college application essays I hear in the hallways leads to an unimaginable volume of sensory input that the human brain has to process, sort, and hierarchize every single day. This self-improving organ, which enables us to make sense of this world and has allowed us to go the moon and back, is truly the most amazing aspect of the human experience. It is my fascination with the human brain that keeps me up at night. Although the human race has successfully mapped everything from the crystalline structure of a diamond to the arrangement of stars in our galaxy, we are still in the preliminary stages of understanding the developmental anatomy of the human brain. The next great frontier for human discovery is right within us; it is my mission to unlock the brain’s secret mechanisms, and discover the clues that will provide breakthroughs in implementing prosthetics, treating mental illness, and curing disease.

3:35 A.M

My thoughts flash to being in the emergency room and seeing my grandmother in the initial hours after suffering a catastrophic stroke. At that moment, my fascination of the brain was more of terror, and it was heartbreaking that she could not recognize the ones she spent a lifetime raising. In the hospital ward I had prayed for many things, but mostly that I could do something to help her. I was too late, but out of the grief of her death rose the inspiration to learn more about the organ that caused her demise.

4:08 A.M

As a contributor to KQED’s #DoNow program, I was able to write articles about the brain that science teachers in the Bay Area used in their curriculum. In the passionate debates our writing team had about the ethics of brain implants and the merits of psychosurgery, I came to realize the power of the brain’s perception: the profound emotions we experience are really nothing but electrical signals in the hippocampus.

4:17 A.M

My mind always returns to a place of unbounded optimism and fascination about the prospects of a future where we’ll be able to harness all the power that the brain has to offer. It amazes me that there are currently thousands solving humanity’s greatest challenges, and I can’t wait to join their ranks. On late nights when my mind is restless, this sense of assurance lulls me to sleep, and the promise of a new day always leaves me excited to wake up and chase my dreams.

# The World's A Stage Anonymous

## Some students have a background, identity, interest, or talent that is so meaningful they believe their application would be incomplete without it. If this sounds like you, then please share your story.

I feel myself jump as the ground shakes, and Horace Vandergelder storms out. My heart beats, and all I can think is to wait for it, wait for it—dialogue, more dialogue, finally singing… “And now that we’re dancing who cares if we ever stop!” That’s our cue. I dart from my position behind a set piece and turn the wrench, bracing my ears for the grating screech the set makes as it splits in half. Scene change time. As us stagehands push the set offstage, then ensemble streams into the middle of the stage to continue the number. Having removed the set, we know quietly sing along in the wings, watching the flourish of costumes as the cast begins to dance. It was opening night, and everything was paying off: from the hours painting and assembling the set, running through the show, and for me, the initial decision to join theater.

I wouldn’t have expected it to happen. Prior to theater, my robustness in class quickly morphed into timidness the instant I stepped into something unfamiliar. So when my friend asked me to join theater, I inevitably declined. “But it’ll be fun, and we need more boys!” “Eh, but I don’t have the time…” Yeah right. More like you’re not willing to sing and dance on stage. “Okay, then how about be a stagehand? You’d help move sets and stuff, and you wouldn’t even need to come to all of the rehearsals” “Let me think about it…” Working behind the scenes proved to be more tenable for me, and a few days later, I showed up at rehearsal thinking “Well, why not?”.

At first, it was as awkward as I had feared; I stumbled around, only knowing two people. But as I worked on the set, two grew to ten, until by opening night, I’d met and worked with all the cast and crew. And while it was more demanding than I expected, between the twelve-hour weekend rehearsals and running around moving props during the show, it more than paid off, though both the audience’s praise and the friends I made. I acclimated to the environment—and I loved it. What’s more, after hanging out with enthusiastic thespians, I become more willing to explore the performing arts. When the show ended, I ended up joining chorus half-way through the year, and next year, I actually auditioned for the musical, getting several small roles. I’d found an activity, totally different from the math and computer science that I was used to, that I thoroughly enjoyed.

After moving to Oregon though, I could not longer participate; my classes at Portland State conflicted with rehearsals, so my theatrical activities were limited to playing improv games during lunch, or acting out “Rosencrantz and Guildenstern are Dead” with friends. Yet, though I haven’t recently reveled in the thrill of singing and dancing on the stage, I nevertheless consider theater to be one of my most valuable experiences. Though I was initially reticent, the way that ultimately bloomed into enthusiasm has helped me find confidence and a willingness to try new things. It’s the reason why, whether competing in Academic Decathlon or rising to speak during Debate, I’m filled with self-confidence. It’s what allowed me to easily adapt to the new, and very different environment in Portland. And it’s the root of my confidence that no matter what happens in the future, I will approach new opportunities fearlessly, and thrive.

# Why Carnegie Mellon? Anonymous

## Please submit a one page, single-spaced essay that explains why you have chosen Carnegie Mellon and your particular major(s), department(s) or program(s). This essay should include the reasons why you've chosen the major(s), any goals or relevant work plans and any other information you would like us to know.

Before I had even entered kindergarten, I would sit on the floor of my father's study room every Saturday morning, both of us bent over a large artist’s sketch pad that was covered in numbers and equations instead of paint or charcoal. From a young age, I enjoyed the logical and systematic style of thinking that he knew so well: it was alluring, powerful, almost mythic to my young mind. But as I matured beyond the intrigue of mathematical theory, I became particularly fascinated with how I could apply my mathematical knowledge to real-world problems, and developed a strong interest in Economics after taking an introductory Economics course during my junior year. Besides learning about how the stock market functions and how to manage my personal finance, I was alerted to the momentous economic issues that plague our nation as a whole, such as the sky-high national debt and severe market crashes like the one in 2008. Our current financial system is flawed, to put it simply; I believe that we should have a system that alleviates the nation’s financial struggles rather than exacerbating them, and I want to develop such a system.

To get started, I undoubtedly need a solid background in Economics because the basis of creating a financial system is all about fiscal management and better allocation of resources. I also believe that having an extensive knowledge in mathematics will definitely benefit me in my pursuit of this goal; by continuing my mathematical education, I will be able to use more sophisticated analytical and quantitative methods to develop my economic model. I was instantly drawn to Carnegie Mellon because it offers a B.S. degree in Economics and Mathematical Sciences, which I intend to apply for during my sophomore year. This program is one of the few in the country that is geared specifically towards students like myself who want to combine the two areas and take courses that complement each other. Integrating courses such as Intermediate Macroeconomics with courses like Principles of Real Analysis will undoubtedly provide a solid foundation for me to pursue my goal.

Since the B.S. degree is offered jointly by the Undergraduate Economics Program and the Department of Mathematical Sciences, I am applying to both the Dietrich College for Humanities and Social Sciences and the Mellon College of Science to major in Economics or Mathematical Sciences respectively. In addition to being able to study exactly what I want, I am also looking forward to taking courses from world-class faculty members such as University Professors Gérard Cornuéjols (Tepper School of Business) and Irene Fonseca (Department of Mathematical Sciences). Their research and insight regarding economics and mathematics serves as an inspiration for me to design my own economic model. With a rigorous education in both Economics and Mathematics and an esteemed faculty to help me along the way, Carnegie Mellon provides the ideal curriculum and surroundings. I'm no longer sitting on the floor of my father's study or in an introductory Economics course, but I am ready to take the same wonder I felt then somewhere new.

# Flipping the Boat Anonymous

## The lessons we take from failure can be fundamental to later success. Recount an incident or time when you experienced failure. How did it affect you, and what did you learn from the experience?

Your world seems to fall here. Air so cold and fingers so numb, you would barely know when it happened. But you do. As your grip slips, it takes only seconds before you realize. Gravity unforgivingly pulls you from your scull and into the frigid grasp of the river. Enveloped by waves, time stands still. Weeks of progress rowing were diluted with one careless mistake. Some people rocked the boat, and I flipped it. The truth is, that rationale made my failure easier to digest. Failure was something that demanded my justification, commanded my thoughts, and seized my progress. It imprisoned my freedom, and freed my fears. It disgusted me. Floating to the surface, these buoyant thoughts remained; How would I free myself? As my double’s partner and I speed back to the dock in my coach’s launch, a deluge of emotion surfaces. Is it anger? Frustration? Disappointment? Denial? Refusing to incarcerate these feelings, I let them flow naturally. Slowly a bolder, more novel concept surfaces, Acceptance. I deal with an uncomfortable reality; I flipped the boat. Half-expecting the walls of my psyche to come crashing down, I noticeably wince. Nothing happens. After the numbing pain of the cold has departed, these questions still float within me. Standing on the dock, I appreciate the weight of the waves. They charge forward to an unmarked destination, without fear of the unknown. Trusting the current, they invest themselves fully into the now. Why can’t I be like them? But then, I notice a backsplash. And then another. Can the seemingly uniform power and majesty of a river current experience resistance? Even nature engages in momentary power struggles with that which battles progress. So why show fear in doing the same? Here is where I did flip the boat. A fear of the unknown no longer confines me. That day, I had flipped the boat on my personality and ignited a side of myself that now burns for adventure and mastery of an unknown world.Progress came slowly, but those opaque waters could never regain the power they once had. As my oars found confidence in gliding over waves, so did I. I found myself coming 2nd in the novice 4x state championship. I found myself rowing in varsity races. I found myself because I learned that failure is not something to dread. Failure is a learning experience. It does not imprison, but rather liberates. Opening to an endless corridor of possibility, failure is the only key to finding success, to reaching my dreams.As what is distant approaches, I cannot help but feel my old psyche creeping, fear of failure stalking. But I refuse to allow vulnerabilities to keep me from the future. Pursuing dreams and aspirations that differ from the norm is not someone else’s destiny; it is mine. The world is constantly redefined by those who know their fear, and allow it to propel the future. It evolves on the backs of those who encourage exploration into the murkier waters, those who are glad to flip the boat.

# Why Carnegie Mellon Angela Wu

## Please submit a one page, single-spaced essay that explains why you have chosen Carnegie Mellon and your particular major(s), department(s) or program(s). Include the reasons why you've chosen the major(s), and any goals or relevant work plans. Please mention each college or program to which you are applying.

Throughout high school, entrepreneurial spirit has always driven me to turn ideas into realities. My endeavors ranged from arranging rhetoric workshops through a non-profit organization and eventually establishing my own organization to host summer debate camps, to partnering with a community café to conduct local market research. Whether it be for the happiness of one person or for the growth of an entire community, I have always wanted to “do good” where I can.

It’s rare that an area of study draws upon multiple disciplines. I love that business explores the social and political effects of economic decisions—an interdisciplinary blend that utilizes logic-based problem solving, but also requires intuition and self-awareness. The Tepper School of Business provides those foundational skills through its integrative focus on “studying business within social, economic, and political contexts.”

While my career interest in a general business major has always been a stable locus point that I’ve centered my passion for learning around, the international business concentration that Tepper offers is an area that I’m less familiar with but am equally as intrigued by. Four years of debating the impacts of public policy on our society has dragged me deeper than I could have ever imagined into the pages of both local and more foreign literature.

How do developing countries prevent the development of extractive economic institutions in the process of industrialization? How do the ways that developed and developing countries interact parallel the ways we deal with structural poverty right here at our own doorsteps?

After years of deliberating the effects of economic policies in other countries and the distinct ways that businesses and governments operate, I’ve dreamed of studying abroad and exploring different perspectives through the overseas experience required by the concentration area.

Along those same lines, how can we overcome social or psychological barriers that have woven their way into our interactions with one another in the workplace? As one of the few Chinese-American female debaters on the national circuit, my experience in an activity mainly dominated by Caucasian males has well-acquainted me with the ways sexism and racism play out in competitive environments, and cultivated my desire to work on research concerning women of color in management positions during my undergraduate years. With my research, I hope to work through clubs and programs like Smart Women Securities and Enactus—symbols of Tepper’s opportunistic community—to create change within local communities.

Furthermore, I’m very interested in taking a course from Professor Rosalind Chow, whose research on inequalities in both the professional and political sphere heavily intersect with my interest in social psychology and experiences in discussions of public policy.

Above all, the focus on a small and close-knit community emphasizes the quality of Carnegie Mellon’s spread of student resources and opportunities. Like coffee and donuts, concept application and pre-professional guidance are a hand-in-hand combination that I can’t go without in my undergraduate experience. From undergraduate advisors and student-faculty research programs to nuanced lessons on business dinner etiquette and student-faculty research programs, I’m certain that Tepper’s diverse curriculum and extracurricular options will equip me with tools for turning my ideas into realities.

# The Magic of a Brick Anonymous

## Why Carnegie Mellon?

The world would have us believe that there is nothing inherently significant about Legos. The simple fact that millions of people grew up with Legos as a part of their childhood does not devalue or minimize my own experience. Rather, I think my young mind’s approach to my arguably conventional hobby made for a richer, more unique experience. I like to say that Legos enlightened me. I began my adventure with a manual for a popular castle set. The first time I tried this common approach towards ‘creativity,’ my thoughts were confined and my expressionism was stymied. How was society to define the perimeters of my imagination?

In rebellion, I made minute alterations. As my modifications progressively increased in complexity, my tangential creations required other ‘outside-of-set’ pieces. My mind sharpened as I imagined solutions to foreseeable problems, dodging schematic flaws while engineering a perfect blend between design and function. I like to say that Legos enlightened me because they taught me problem solving that carried over into the classroom. If I could problem solve with my Legos, then why not here? The sciences and maths became my playground. I began with the ‘manual approach’ to new concepts, strict textbook work without much creativity. The more I learned, the more I grasped larger problems for which the world needed solutions.

As I began to merge my two loves -- science and problem solving -- I realized that engineering is my calling. With past experience at recall, I know that piecing global problems together, block by block, will yield a solution eventually. Even an optimist like me knows that doing so will require an arsenal of reliable ‘outside-of-set’ pieces. With the resources available at Carnegie Mellon, I hope to contribute to the progressive, knowledge-seeking environment of the university. The opportunity to gain a unique view of the world makes Carnegie Mellon’s global education invaluable. Seeing the world beyond the science of engineering, will provide new perspectives while allowing me to pursue varied interests that connect with my major. As the curriculum allows for flexibility, I can expose myself to a world beyond the scope of what I know.

Only Carnegie Mellon offers the unique opportunity of minoring in Global Engineering, while majoring in Chemical Engineering. The Global Engineering program gives students the ability to affect the world on an international level, using their talents in engineering. By giving students the ability to directly influence the world before graduating, innovation is facilitated. Without much understanding of what the world really had to offer, I joined MUN and YAG as a freshman. Astounded by the level of depth and understanding exhibited by the other participants, I grew to love both programs. Eventually becoming president of both clubs, I found that my motivation shifted -- rather than developing my own world perspective, I began to envision helping others to experience what I had in the programs. I expanded on my own passion for global affairs through my school newspaper, eventually becoming the world and US news editor. Finally, in founding Leadership Experience Opportunities I hoped to help students impact their local communities through service, volunteering, and leadership. These activities have changed my outlook towards problem solving in perspective of the world. My passion for global affairs and politics have come together with my love for science to become more tools to utilize for innovation. I hope to bring these passions to Carnegie Mellon in support of the diversity and experience required of innovation and engineering.

As I look into the bucket of Legos that is my future, I see endless potential. Ingenuity and vision allow engineers to see solutions to problems that no one else can answer. At the heart of Carnegie Mellon lies a bona fide passion and pursuit of these traits. I want to go to Carnegie Mellon because unlike any other university, it tirelessly seeks answers for problems that no one else will challenge. Carnegie Mellon embodies the soul of engineering, a spirit unafraid to build from imagination.

# Facades Anonymous

## Some students have a background, identity, interest, or talent that is so meaningful they believe their application would be incomplete without it. If this sounds like you, then please share your story.

I often travel through a land of backpacks, ironed silk suits, Hawaiian slippers, colorful shirts, low-waist jeans and outfits that do not even have a name. This is a land where shoes are worn and pants are stained with adhesive, where tie knots are just so and fingernails are perfectly polished. This land is simply the microcosm of the world where all types of people from all backgrounds travel: The New Delhi Local Metro.

The first time I travelled in it, the one thing that intrigued me was the silence in the train even though it was packed with people. Each and every person was reserved, self-contained and absorbed. It was like a peaceful chaos moving slowly through time, like a single unit, where the only sound was that of the voice on the PA system informing us about the next station, as if reminding us of the reality waiting beyond the bubble of our consciousness.

Every corner contained a new character; one holding his smooth leather office bag tightly to his stomach as if nervous before his first job interview; another looking out of the window at the moving blurred landscape lost in reverie. These characters that I encountered each day filled an emptiness in me. I always characterized this emptiness as a lack of knowledge of the world on my part and everyday while travelling in the Metro I would gain something, something new about the world, something new about the mechanics of it, something which would fill this partial void.

The small acts that these characters performed would actually speak louder than any words. For example, take the small act of paying for tickets. On one hand there are some people who will meticulously count the amount of money and diligently arrange the denominations after taking it out of the folds and creases of their wallets or bags; on the other hand there are some people who will simply take out the roughly folded and crumpled bills from their compressed pockets and will expect the cashier to do the job of sorting the cash. Through these simple things I would learn a lot about people, about how certain people act in certain situations. However, little did I realize it then that this trait of mine of being observant would turn out to be significantly valuable in the future.

In the spring of 2011, I moved to a boarding school and my connection with the Delhi Metro was broken. Although I met new people there, I could not find anyone like my good old ‘characters’. I needed the relationship back; I needed the connection back. So I embarked on finding this connection. I started acting, and somehow through that I could relive the connection; I could play out the characters that I had encountered in the past. Sometimes I mixed the different traits, different behaviors of different characters and the result always came out to be new. I could actually, as many actors would say, ‘get under the skin’ of each character I played. The connection was so healthy and strong that I could actually imagine the hand and body movements of each character fastened to my memory.

I applied the same thing to the difficult situations I faced. If I can put it in simple words, ‘I acted my way out through them’. Because I would never be myself or what I am inside, people often labeled me as ‘pretentious’, and that would always intrigue me to think:

“Am I really losing my identity by doing this?”

I started questioning my individuality and only one answer came to my mind:

“A virtue of a good actor is to be able to lose his identity.”

And a virtue of a reasonable, rational person, however, is to recognize that.

# Tempo Giusto Anonymous

## Write about an experience which changed your views on something. Common application essay prompt - 2016

I glared at the plastic contraption before me and tried one last time to summon any telekinesis powers.

Nope. Nothing. The device’s arm stubbornly oscillated at a regular pace, like a mocking tongue across a palate. I sighed dejectedly and shut the piano’s cover. At seven, I was partial to the dramatic.

The Metronome. Causer of anguish from the day it arrived from the Jumeirah Centre. It first coldly informed me that my playing was too fast and erratic, lagging obstinately behind. Later, it declared that I wasn’t playing fast enough; my notes were falling over themselves, struggling to keep up. It paid no heed to my attempts to will it to match my fingers, and my teachers’ faces grew longer the more I practiced.

The word ‘Gifted’ is thrown around unsparingly amongst the Indian diaspora. Seeing the remotest competence in a child, adults are quick to brand them as one of God’s chosen and immediately set them to work, lest the world should lose out on such prodigious talent.

That unforgiving object spared no punches in proclaiming that I lacked such talents and that pursuing music was therefore futile. I had seen Gifts firsthand; when certain older students performed at the Embassy Concerts, they weren’t just playing.They were delivering pieces of musical tradition to the audience and inviting them to marvel. They were never bogged down with the technicalities of beat regularity. I became increasingly frustrated; had I done anything in previous lives to condemn me to this state of un-Giftedness? Which of the 330 million Hindu deities allotted Gift quotas? What exactly was their reasoning behind allowing such glaring disparities in Giftedness levels?

In one of my fits of angst, I started to explore the metronome mechanism. The device was completely analog and therefore alien and fascinating. I spent half an hour fiddling; I observed how winding the key shifted a gear and compressed a spring. Sliding the weight adjusted the speed at which the lower end of the arm oscillated past the teeth of the primary gear, making a click every time it struck a tooth.

Somewhere, I had a lightbulb – or perhaps flickering-to-life tube light - moment. I had taken apart what I had built up to be the vessel of my fury and found absolutely no hint of an animus. This was nothing but an inanimate tool, whose sole purpose was to help me to identify my mistakes in my endeavor to improve.

Later, I sat down on the piano stool and instead of willing the metronome to keep up with me, I set to a slower tempo and practiced from there. I took its admonitions with, if not appreciation, acceptance. And quite magically, my teachers’ faces grew shorter and shorter, as did mine. I thought of my metronome in quite unexpected situations - and gradually realized that there was so much beyond ‘Giftedness’.

My loss of a debate in class wasn’t brutal disclosure of my lack of speaking Gifts; it was an opportunity to appreciate and to learn from the winners. Struggling with an orchestra piece wasn’t a cue to self-indulgently ponder why others had cartilage structures more suited to playing the flute; it was a message that I needed to practice third-octave runs. I took everything as a lesson and focused on my process of improvement. As I moved up through the music ensemble ranks at my school, I eagerly took notes from everyone. I even joined activities where my lack of Giftedness was more than apparent, like Yoga and Dance, and enjoyed them immensely.

With everything I did, I challenged the idea that Giftedness was purely innate, and that endeavors were worthless unless you were bestowed with it. It’s bizarre to attribute so much to a plastic object, but it taught me something valuable - those who succeed and thrive have simply been scolded by their metronomes countless times.

# My interest in studying engineering at Carnegie Mellon University. Anonymous

## Why do you want to study engineering at Carnegie Mellon University?

I have two homes, and they could not be more different.

My life in futurism-crazed Dubai is punctuated by my summers, which are spent amid the feeble cleanliness systems and lack of robust infrastructure endemic to places like Kolkata. This experience highlighted how crippling the lack of infrastructure could be. Growing up, I constantly looked for novel ways in which the environment could be improved. I naturally gravitated towards Civil Engineering because it is the profession of problem solvers, who use their scientific knowledge and skills to shape and improve people’s environments.

While reading around this subject, I took two online courses to get further insights into advanced mechanics and materials science. I pursued my passion for engineering and sustainability outside of textbooks and articles. My introduction to current standards came first- I learned about LEED standards and methods engineers use to achieve certification at a contracting company. What really struck me was how holistic sustainable engineering could be; every single part of a building or machine could be optimized.To examine these separate parts in a different context, I later completed a lighting energy audit (see jetasrigupta.wordpress.com). Next, I focused on the engineering uses of BIM and chiller performance modeling technologies. While looking at all of these I was inspired by the advancements made, but I also saw how much more was needed- technologies needed to be smarter and more efficient, as well as economically viable. Moreover, a fundamental shift in the behavior of businesses, as well as residents was required.

Carnegie Mellon, I feel, is a college where I could explore my interests by receiving a rigorous engineering education and by using resources to further my interests in sustainability. Although Civil Engineering is my primary interest, I would also get a broad education, while taking a general education and Dietrich courses. I hope to specialize in the energy aspect of environmental engineering while completing the course requirements and would look forward to taking the Renewable Energy Engineering course in particular, as I hope to pursue a career in this field.

The college of engineering is also fully committed to research in energy, citing it as a strategic initiative, and provides extraordinary opportunities to observe and to be inspired by cutting-edge research. Moreover, it recognizes the holistic and interdisciplinary nature of sustainability. I’d look forward to exploring the exciting and relevant research carried out at CACES, CEINT, GDI and the Scott Institute, among others. I am also excited by the prospect of learning from the research and expertise of Professors Dzombak and Samaras to further my interests in infrastructure, energy solutions and their development. Undergraduate research is an integral part of the Carnegie Mellon experience, and I would take full opportunity to work alongside a faculty member.

I find it appealing that the university is situated in a vibrant city. I can imagine being a part of the CMU chapter of Engineers Without Borders to discuss and solve problems of developing infrastructure, as well as the Society of Women Engineers to serve their work and cause - it would be the next natural progression to my involvement with Women in STEM activities in Dubai. I would assist faculty in the various civic engagement activities carried out around Pittsburgh, using the information and resources provided by SLICE. Having explored the cornucopia of courses activities available at Carnegie Mellon, I’d hope to graduate as a problem solver - an individual committed and primed to tackle the infrastructure and sustainability needs of the day, with a robust skill set at my disposal.

# Entreprenurial Spirit Anonymous

## Please submit a one page, single-spaced essay that explains why you have chosen Carnegie Mellon and your particular major(s), department(s) or program(s). This essay should include the reasons why you've chosen the major(s), any goals or relevant work plans and any other information you would like us to know. For freshmen applying to more than one college or program, please mention each college or program to which you are applying. Because our admission committees review applicants by college and program, your essay can impact our final decision. Candidates applying for early decision or transfer may apply to only one college and department.

In tenth grade, I had a wild idea: a reusable cosmetics container made from plastic recovered from the ocean. I would negotiate a deal with an ocean cleanup organization, build prototypes out of the acquired plastic, pitch my product and my vision to haircare and makeup companies, and radically transform the cosmetics packaging industry. Exciting, I know. But, with no business experience or resources, my wild idea remained untamed. A Tepper education and experience, however, will change that.

A drive to bring ideas to life and share them with people has always led me to pursue different iterations of entrepreneurship. As a five-year-old, I often sifted through my dad’s thick black hair and charged him one cent a strand to pluck out stray white ones. As I grew older, my business plans grew more elaborate. In fourth grade, I discovered that my classmates would happily dish out a quarter in exchange for a colored drawing copied from “Kids Draw: Anime” and signed in careful cursive in the bottom-right corner (excuse my ignorance of copyrighted work). In seventh grade, I created Temptation Btq, my online polymer clay charm store. I hand-made and sold everything from rainbow macarons to social media app bracelets, and eventually, I earned $200 and made my first donation to Doctors Without Borders. What I love most about creating these mini one-woman companies is turning an idea into reality and providing people with what I created.

This summer, I took my first steps into the “grown-up” business world and interned at Mason Bottle, a startup that sells mason jar baby bottles. This was the real deal: I pitched products over the phone to prospective stockists, crafted Facebook ads, and gathered data on customer satisfaction—real feedback from customers who loved the products we had brought to life. As one of the first interns for this couple-run company, I took a dip into several different aspects of business and grew to love them all.

At Tepper, I intend to take another dip (or many). The championing of an entrepreneurship-fostering environment and encouragement of cross-disciplinary study make for a candy-aisle type of magnetism, and as someone who loves candy and choice, I’ll be taking full advantage of that. One day, I’ll dissect the thoughts of potential investors of my cosmetics container line in Funding Entrepreneurial Ventures, and later I’ll learn to maximize technological efficiency in Business Computing. On the side, I could expand Temptation Btq into an arts program for middle school students with the vast amount of resources I have access to, or dive into a fantastically new activity, like Strong Women Strong Girls (I’m already bouncing in my seat for this one). Business is about listening to people, and with Tepper’s dedication to collaboration and the sheer saturation of intellectual energy, not only will I have no problem listening, I’ll also obtain the prowess and zeal needed to act upon what I hear.

Things will be going in opposite directions, but in a good way. Tepper will help me narrow down my passions while simultaneously widening my worldly perspective. The convergence of our avid pizzazz and do-good determination have proven to me that Tepper is where I belong.

# Computing My Way Through Life Yaotian Feng

## Please submit a one page, single-spaced essay that explains why you have chosen Carnegie Mellon and your particular major(s), department(s) or program(s). This essay should include the reasons why you’ve chosen the major(s), any goals or relevant work plans and any other information you would like us to know. For freshmen applying to more than one college or program, please mention each college or program to which you are applying. Because our admission committees review applicants by college and program, your essay can impact our final decision. Candidates applying for early decision or transfer may apply to only one college and department.

A semicolon, and a brace there. Done! I hit the “Compile and Run” button, my first ever computer program has printed out the famous “Hello World.”

When I was ten years old, I found a book on “Windows” operating system from my parents’ bookshelves. I started reading it without knowing anything about what is "Windows." As I read the book, there were many experiments that I could “try it out,” and I did it one by one. Following the instruction and see the computer performs what I tell it to do felt like a had control over that powerful machine. It did not take long before I believed that I was ready for more challenging tasks: developing my programs. I had always wondered how are these programs I used were made, so I decided to learn about how to make my program. Since I completed my first “Hello World” program, I have been spending hours every day sitting in front of a computer experimenting with different programming languages and techniques. Trying out different and known things are inspiring to me as I can see how the machine reacts to my different commands.

As I came to the U.S. for high school, I had my first formal computer science class. Taking a course for the first time further confirmed my passion for computer science. In the class, we implemented all kinds of projects and algorithms that deepened my understanding of computer science even more. Here I also met my great friend and colleague, Sam. We together have worked on many different projects together, including a student management software for the school, a conference system for a publicly traded pharmaceutical company, and now an online education platform that hope to help spread the even access of education in under-developed countries. Being able to make an impact on lives of other people is the main drive force for me to learn computer sciences, it is such rewarding to see how my products can help change the lives of so many people.

While I am researching about machine learning for my education platform, Carnegie Mellon came across my eyes as the authors’ school of many papers published. This frequent appearance made me take a further look at it. The institution had been in the cutting-edge research in almost all of the areas of computer science, including the now popular artificial intelligence and machine learning. Join this group of influential professionals not only help me learn about the newest and best technology in the field but also provide me with the chance to work with these professors to develop better technology. In addition to the diverse academic programs it has, the institution even offered many programs such as a campus in Silicon Valley that helps student migrate into the field with ease.

This year, my friend, Sam, who is currently a freshman at Carnegie Mellon, invited me to come to camps during Thanksgiving break. Walking inside the Gates Hillman Center, I saw groups of people sitting together discussing problems; I can even see the passion they have on the field through their eyes. As I walked around campus, I could hear discussions about algorithms and coding problems. Being surrounded by people who share the similar passion and energy as I do not only make me feel comfortable but also encourages me to work hard and spark innovative ideas. During my visit to CMU, I had the fortune to attend Iliano’s 15-122 class on Principles of Imperative Programming. In the session I attended, he talked about the mechanisms behind modern Virtual Machines. These topics cover in class caught my interest, after the class I even completed their programming assignment for fun. To me, these experiments are great learning opportunities as well as a great entertainment. Through the classes I attended at CMU, I felt my long-yearned-for feeling of “Today I learned something” again.

# Cowboys and Aliens Anonymous

## When we’re connected to others, we become better people,” said Carnegie Mellon University’s Randy Pausch, author of The Last Lecture. At Carnegie Mellon you’ll have the opportunity to collaborate with a diverse community of scholars, artists and innovators. Given the students, faculty, staff and resources that have been available to you as a student, how have you collaborated with others, in or out of the classroom? Or, what lessons have you learned from working with others in the past, that might shape your experiences in the future?

After the last shot had been fired, I realized I had been holding my breath. As fatigued comrades began to scoop stray bullets from the ground and put them into sacks containing plastic props, I took my first stilted breaths in four weeks. We had survived. My friends and I had successfully conducted our first Fall Festival as newly appointed Teen Ministers in our church.

During my childhood, the Fall Festival epitomised the bubble I lived in. Adults murmured in agreement underneath copper tinged trees as we, the costume-clad children, dashed from stand to stand. The pumpkin filled halls of our church were safe spaces for the beliefs our families shared. I never questioned why we worshipped there every Sunday without fail, or why my parents disapproved of children who indulged in ghoulish Halloween themes. I remained firmly within my circle of friends who affirmed my inherited beliefs until the day Miss Beth, the church secretary, walked into our Bible study group. Miss Beth explained the roles of the Teen Ministers in organising the Fall Festival but, for the first time, we faced the challenge of being chronically understaffed. We would have to seek volunteers outside of our bubble.

Persuading others to participate in our ostensibly 'religious' event was an ordeal. Working in a team of teens divided by religion was even more difficult. As retorts and critiques were fired between Christian volunteers and non-Christians during planning sessions, the possibility of the Fall Festival being realised diminished. I was compelled to find a unifying thread between both 'camps'. I organised a "trigger-free" meeting in a game arcade to encourage the volunteers to abandon their biases, speak nicely to one another and exchange ideas. The result was a space cowboy theme: a highly novel concept for our church. Although the older church authorities were concerned that the "new" theme didn't align with certain traditions, I convinced them that the theme would help to make the Festival more inclusive. As the team of volunteers painted set pieces and built props under the 'trigger-free' rule, real conversations emerged, enabling the volunteers to see past differences and acknowledged their shared experiences.

On the day of the Fall Festival, I watched as children dressed in Western outfits aimed toy guns at alien cutouts. There were no divisions or resentments. The high turnout showed me that a bridge could be built no matter how vast differences seemed. The Fall Festival had transcended the bubble by becoming a safe space for all, the grounds for new friendships to be forged, and, most importantly, a bona fide community.

# Passion Essay for Carnegie Mellon Robby Stigler

## Prompt #1: “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?”

For my entire life, I have had an affinity for creating things. When I was young, it was by building Lego spires that seemed to stretch to the sky, or epic Lincoln Log castles that could win out over any dragon. But one thing that always frustrated me was the finite space and materials that I could use; it seemed that there was no way for me to create as much as I wished. Then in the third grade, I was introduced to video games. The possibilities seemed to grow before my eyes. Entire worlds were contained within cartridges and discs, entire stories and characters created by etchings on a ring of plastic. Even though, to start, my only thoughts were to play out these worlds that others had created, as the complexity and breathtaking beauty of video games advanced, my earlier affinity for creation set the idea in my mind that, if all of these other people could create such amazing worlds and stories in such a small space, why couldn’t I do the same?

This is the idea that seeded my interest in computer science that has continued to this day. However, this was all just theory for me. Up until high school, I had never actually taken an official computer science or programming class. So I decided to take a summer class at UTA (University of Texas at Arlington) and see whether or not I liked computer science as my choice of intellectual and artistic output. Reflecting on this, saying that I “liked” computer science is an enormous understatement. After class every morning, I would return home and before doing anything else, I would sit at my computer and finish the homework. Then, once I had finished the specified lab assignments for the day, I would continue editing the program, making it cleaner, more succinct, and even going so far as to attempting to make it “user friendly” for the professor. There are most likely many people out there who dedicate this much time to each and every homework assignment, but for me, that would be rare. Usually I work on my assignment until I believe the teacher would be pleased with it. In my computer science class, I worked until I was pleased with it. Realizing this is what cemented in my decision as computer science for my major. Understanding that computer science isn’t just a class where I am willing to learn more than what is required, but a class where I am driven to learn more than what is required, and have fun doing it, is why I am going to study computer science wherever I go. It is also for this reason that I am applying to and earnestly wish to go to Carnegie Mellon University.

The first time I heard of Carnegie Mellon was in the form of an invitation to an information session. At first I was skeptical of whether this would be a waste of time or not. However, when I talked to my parents about it, they informed me that they had already registered me and I was going “whether I liked it or not”. Realizing that resistance was futile, I decided to hear out the representatives and what they were saying anyways. Never before have I been so grateful for my parents’ willingness to make decisions for me. After that info session, I fell in love with the geeky, hard driven, fun loving atmosphere of CMU, so much that I decided to go on a campus tour and attend the Sleeping Bag Weekend, both of which affirmed CMU as my number one school. It also doesn’t hurt that Carnegie Mellon is consistently ranked at the top of any list for computer science schools. My hopes by attending Carnegie Mellon isn’t just to learn the concepts of computer science, but instead to earn the resources that I need so that when I graduate, I can return to the video game industry where my passion for computer science first began and continue doing what I love. Through this I also hope that someday I can provide the inspiration for others to pursue what they love in life.

# Packet of Tissue Anonymous

## Discuss an accomplishment, event, or realization that sparked a period of personal growth and a new understanding of yourself or others.

“You are going to a boarding school in Singapore,” said my parents one day.

The decision to send me off to boarding school came as a surprise for my family’s acquaintances. It came as a shock to me --- especially since I did not even know what the boarding school would be like. Even with people questioning the situation, my parents stood firmly on their ground. I, on the other hand, was ecstatic about the new environment I was going to be a part of. Being an only child, my friends were like my siblings. What they learned from their older siblings, I learned from them. They have always been the roots of my personal growth. To have more of them was a marvelling experience.

Moving to Singapore was a huge whirlwind of “new.”There was no one telling me when to shower, when to go out, what to eat, and what to do. For the first time in my life, I felt in control of my time and space. But that did not last too long. “Don’t spend too much money on Starbucks”, “Don’t eat too much McDonalds.” Don’t. Don’t Don’t. The speed of the internet connection would have found it hard to catch up with the speed of my parents’ instructions. Their instructions have always been rooted at one thing: financial planning. I did not understand why they were worried. Even so, I did what they asked: kept track of my spendings. Gradually, I became more sympathetic of their concerns. Sympathy, I learned, is a foundational experience for personal growth. My parents wanted me to understand the value of money --- and the hard work required to obtain it.

“How much for a packet of tissue?,” I asked an old lady. In Singapore, it is common for the elderly to work past their years to support themselves. “A dollar. Where you from?” I explained to her that I was from Myanmar, and that I was here for boarding school. Eager to strike a conversation, she told me about her life from the time she worked at a restaurant to being a single mother. “You so lucky. Thank your parents. I did not have any education. So look at me: I am selling tissues at 63.” And so I bought all the tissues she had to sell. All I wanted was a packet of tissues. But I got a valuable life lesson to appreciate what I have and to try harder. Personal growth came to me in many forms, including a packet of tissue.

# How to Become Stronger Anonymous

## Discuss an accomplishment, event, or realization that sparked a period of personal growth and a new understanding of yourself or others.

When I was in seventh grade, my mom, who is an acclaimed pianist, was invited to participate in the Vienna ConcertoFest, a two-week summer program to perform concertos. My mom asked me to join and participate with her at the festival. I played viola and was never exceptional at it, but how hard could two weeks of music be? I agreed to the invitation.

On the first day, I couldn't help but notice the outstanding tone and technique of the musicians in the program. I was instantly in awe. The string players produced a resonant tone and demonstrated perfect intonation. It was a sight I had never witnessed in my middle school orchestra. All of the participants in the festival, including my mom, were adept musicians, except for me. This new realization made me want to quit the program, but it was too late.

The idea of being the worst player in the program already made me feel miserable, but the coaches in the program made things worse. The private-lesson teachers I used to have were kind and avoided reproach when giving feedback, whereas the coaches in the program were forthright since they were there to help musicians whose careers depended on their performance. They rarely complimented me when I played well, and when I repeated my mistakes; they scolded me in front of my mom. For instance, in my second lesson, I failed to demonstrate improvement from my first one, so the coach expressed his anger and disappointment.

"I don't see any change from last time. You sound exactly the same. How am I supposed to coach you if you're not improving?"

Whenever I was playing in the practice room, I was so embarrassed when another musician passed by. As soon as I heard footsteps, I quickly put my viola down and pretended to scribble on my sheet music. While my mom encouraged me to produce a more projective sound, I played as quietly as possible so that the others wouldn't hear me. Within a few days, everyone knew that I was an amateur violist. When the coaches told me that I would not be able to perform if they didn't think I was qualified to do so by the end of the program, I felt relieved at the time.

Before joining this camp, I was used to being consistently rewarded even if my performance didn't deserve the praise. My lesson-teachers addressed my weaknesses in a benign manner, so I was able to approach them without a lot of stress. However, during the program, I was frustrated with the constant criticism of my flawed techniques and my inability to fix them quickly. Although I was discouraged at first, I eventually realized that I needed to change my focus.

My attention shifted from the coaches' disapproving attitude to their feedback itself. I practiced for countless number of hours trying to improve myself for the upcoming performance, and I wasn't embarrassed by my incompetence anymore. The criticisms about my skills as a musician built a determination in me I didn't know I had.

Though it has been four years since the program, I still constantly remind my mom about how traumatizing the camp was for me. But what I don't tell her is how much I gained from this experience that I couldn't gain from school. The Vienna ConcertoFest was more than a musical challenge for me; it helped me gain mental strength. By stepping into the world of professional performers as a clueless amateur, I developed my perseverance. In my middle school orchestra, I was considered to be musically inclined. This musical festival had put me in an environment where I was the least competent musician. It allowed me to learn how to handle with discouragement and discomfort. Although the experience was challenging, it made me a stronger individual.