

If you are interested in pursuing a B.S.E. (Bachelor of Science in Engineering) degree, please write a 300-500 word essay describing why you are interested in studying engineering, any experiences in or exposure to engineering you have had, and how you think the programs in engineering offered at Princeton suit your particular interests.

I stood in front of the audience, enveloped in their generous applause, within the lecture hall. At the University of Maryland, my team had just presented our week-long research project—a hypothetical underwater drone for deep-sea cartography. Today, I'm privileged with an intellectual pursuit reminiscent of my project at the Discover Engineering camp over a year ago. For my Johns Hopkins Applied Physics Laboratory internship, I undertake a year-long research problem on aircraft flight. Its implications fascinate me. Uncovering the correlation between lift and angle of attack, contriving vectors and tensors to model an aileron roll—I eagerly discover each facet under the mentorship of an aerospace engineer. Together, we investigate not only the physical realities of a plane in airflow, but also the MATLAB code used to model it.

At Princeton, I will take on a similar endeavor—the Senior Thesis. To some, the prospect of a year-long school project might prompt dread. Not for me. As I have learned in my camp and internship, I revel where learning is a self-directed responsibility. I thirst to develop, as I do with my mentor, close relations with a faculty member from almost any department I require—this multidisciplinary theme I definitely appreciate. Indeed, I already picture myself fusing Computer Science and Aerospace to create autonomous vehicles—I could even bring my underwater drone to life!

In my engineering experience, I have developed fascination for the physical laws governing the world. Simultaneously, my passions tend towards Computer Science: I see its increasing relevance in society and inevitable relation to all of engineering. With daily frequency I pursue this field, attending to coding challenges and web design on the global open-source coding community of freecodecamp. While I envision myself majoring in Mechanical and Aerospace, I cannot shun this hobby altogether. Princeton reflects my inclinations. In particular, the Program in Applications of Computing mirrors my aptitude for computational and interdisciplinary learning. I am curious about the diversity of perspectives to be gained meeting peers in disciplines from sociology to economics. Additionally, I will thoroughly build upon the computational foundations that I currently develop everyday.

Aside from curricular coursework, I appreciate Princeton's Engineers Without Borders offering. Last year, I attended a Day With an Engineer, exchanging a school-day to tour the headquarters of the RMF engineering firm. I particularly learned about sustainability measures implemented in building design (LEED certifications specifically) from the RMF president himself. The experience solidified sustainability as a crucial responsibility for all engineers moving forward.

Within Engineers Without Borders, I seek to contribute to a sustainable world literally across it, venturing to the communities in Kenya, Peru, or the Dominican Republic to contribute with water filtration systems.

The potentials of my next four years seem boundless. The Senior Thesis, Program in Applications for Computing, Engineers Without Borders—I will immerse myself in each. At Princeton I will continue my journey as a lifelong learner: I hope to pursue the intellectual passions I hold dear, and, just as importantly, realize new ones.

5. Using a favorite quotation from an essay or book you have read in the last three years as a starting point, tell us about an event or experience that helped you define one of your values or changed how you approach the world. Please write the quotation, title and author at the beginning of your essay.

Please enter your selected essay here:

“More research is suggesting that, far from being simply encoded in the genes, much of personality is a flexible and dynamic thing that changes over life span and is shaped by experience” mindset, Carol S. Dweck, Ph.D.

High School paralyzed me. I was stalked by the fear of rejection, a perpetual affliction. Worried about my voice cracking during a Civil Rights debate or being alone in C lunch, I cowered behind a shield of solitude. My inertia tormented me. These withdrawals—accepting the 0% in participation, starting homework when the lunch bell rang—acted more like sabres, not shields, slashing my ego. School reflected the self-doubt I felt outside classroom walls, but as my shyness came to a head, I discovered Comfort Zone Challenges. Till Gross’s TEDTalk explained a strategy of confronting social anxieties by forcing yourself to do strange and embarrassing things in public. By being vulnerable in public, he reasoned, you trained yourself to overcome your fears.

These challenges were a venture into unknown. Yes, I was tired of insecurities, but I wavered between acceptance and defiance. Choosing the latter was more than YMCA workouts, soccer practices, or coding projects I was accustomed to: I was exercising the fabric of identity, not the fibers of quadriceps or neural connections over synapses.

This challenge (my second altogether) is simple—howl in Barnes & Noble—but its execution

sure isn't. I pace between the aisles and cafe, torn. My worries extend to my muted surroundings—the elderly couple in hushed conversation, the “Pokemon-Go” fanatics probing the aisles, the suited businessman sipping coffee. Surely they'll be up in arms once I disturb the peace! Summoning strenuous willpower, I quench my misgivings. I inhale... and let loose a repulsive rendition of a wolf cry, “HOWLLLLLLLLL!” The silence returns at once, but not without hair-tearing tension. I stand alone. My ears, expecting a harangue of profanity, only detect sighs of irritation as the public pauses in apathetic, not violent, disapproval. Even the expressions of the baristas, which had initially contorted in bitter annoyance, mellow into disregard. As for me, I proceed out the bookstore beaming.

Thankfully, these therapeutic endeavors have granted me confidence. If I can howl amidst a bookstore, get rejected ten times in Times Square, or do push-ups in a Chipotle line, I can raise my hand in class. This mindset has held fast: participation grades have skyrocketed.

Choosing Comfort Zone Challenges reflected my growth mindset. Coined in mindset, by Dr. Carol S. Dweck, this mentality is “the belief that... basic qualities... you can cultivate through efforts.” Dr. Dweck preaches more than stale hard work, she preaches effort in untapped frontiers. Moreover, growth encompasses anything as fundamental as personality—not only brawn and brain. I had digested Dr. Dweck's research, but I realized its relevance upon howling. Wading in thorny silence of Barnes & Noble, hearing “No, you can't be my bestie, get the &@%\$ away from me” from a New Yorker, ordering a Burrito despite the gawk of the Chipotle chef—these frights I become numb to. I am hewing extroversion from shyness.

Of course, my temperamental journey only blossoms. I have yet to extinguish the fiery anxiety of speeches and a gargantuan nightmare: pretty girls. Nonetheless, I enjoy any progress and will persist in more ways than howling. Whether undertaking foreign subjects, stretching my social reach in fraternities (eating clubs not being overlooked), or expanding my perspective with Engineers Without Borders and academic programs abroad, I relish the challenge. Why? I'm doing it for the boy in lunch who passed up growth for what was “easy”. I'm doing it for those similarly confined I now notice daily. The wallflower, holed up in Beats headphones, selecting songs over stimulating conversation. The workaholic working for preoccupation's sake, passing up rapport with classmates two rows back. I want everyone to realize genetic tendencies do not exist, to exploit the plasticity of personality. After all, experience is a choice away.

Please briefly elaborate on one of your extracurricular activities or work experiences that was particularly meaningful to you. (About 150 words)

“Ms. Patty! Let me take that for you!” Reaching for the crate brimming with Chef Boyardee cans, I recognize my mentor’s dedication despite her frailty. Shelving assorted goods is just a fraction of my responsibility at Catonsville Emergency Assistance. For one, assorting donated goods—by date, size, type—antecedes shelving. I also do the dirty work around the facility like raking, shoveling snow, and cleaning—dishes, floors, shelves, the bathroom. I take most comfort in overseeing food distribution as several days’ worth of provisions are supplied to struggling local residents weekly. Although I never meet the recipients, I am grateful to help fulfill their needs. Volunteering at CEA is a privilege to aid the homeless and impoverished in the Maryland area, while working alongside such a diligent public servant as Ms. Patty. For the rest of my life, I want to continue giving back, as I have at CEA, in her image, consistently and devoutly.

Please tell us how you have spent the last two summers (or vacations between school years), including any jobs you have held. (About 150 words)

My last two summers involved frequent work and volunteering experience, intellectual pursuits, and athletic preparation. After sophomore year, I continued my second year of lifeguarding for Five-Oaks Swim Club. Amidst this daily commitment, I devoted hours to volunteering at Catonsville Emergency Assistance every Wednesday. In my free time, I took to soccer training four days per week. I earned acceptance and enrolled in the rigorous and aptly-named Discover Engineering camp at the University of Maryland. Next summer, while juggling my third year as a lifeguard and second as a CEA volunteer, I met my goal of seventy hours of soccer training. Midway through, I began volunteering my time to assist practices of local youth players for Catonsville Elite Soccer. During this influx of responsibility, my STEM interests meandered to Computer Science: I completed an online computer science introductory course. Afterwards, I joined the global coding community of freecodecamp.com, where I took coding classes and developed webpages and apps.