1. Describe your short term and long term academic and professional intentions. \* (250-word limit)

I am graduating with my second master’s in electrical engineering with a focus on space systems engineering this summer of 2026 and from there start my PhD in aerospace engineering. My research interests include robust GNC algorithms that can reject disturbance and model free and adaptive algorithms. Research and teaching are my academic and professional intentions. Short term I plan on mentoring undergraduate students. At Stanford this would be programs such as the AIM Interactive Mentoring Program and the Honors Thesis Mentorship Program. I want to help undergrads, especially first generation, navigate something that no one in their family has ever done before and remove as many barriers as possible. My goal in this mentorship is to guide them through their undergraduate career and then into their future careers. Whether that is in a professional setting or moving onto higher education. Professionally my long-term intension is to develop novel guidance navigation and controls algorithms for space applications during interplanetary travel. This would include high fidelity modeling and simulation for deep space mission design and trajectory optimization and other guidance algorithms with online optimization. For deep space navigation, this would be research, development, and implementation of filter estimators that don’t heavily rely on the model or are even model free, through techniques such as noise compensation and dynamic model compensation. This would also include online covariance matching for the state, process, and measurement noise. For controls this would include model free disturbance control algorithms with adaptive gains. For mentoring this would include starting a research lab as a professor. This lab would focus on the technical aspects of guidance navigation and control for deep space missions. But it will also serve a higher purpose of targeting students from marginalized communities. Offering mentorship, academic and professional growth to these students. Again, removing another barrier. This program would pair undergraduate and graduate students together, where the graduate student would lead the technical aspect of the research and mentor the undergraduate student assigning them appropriate problems where they will develop their skills. Again, removing the barriers for these students so they can focus on their professional and academic endeavors, while the lab is able to provide and inclusive, safe, and welcoming environment for students to grow.

1. Please tell us when you: \* (All fields required)
   1. Engaged with someone with a different perspective

For my thesis, part of it was recruiting students to participate in an introductory rocketry course where we give them a modified assessment structure. This class was aimed at non aerospace undergraduate students. I reached out through mass email and led discussions during classes, registered student organization meetings, and other academic gatherings. Even though the class was targeted towards this demographic of students, many of them believed that they didn’t belong in the class due to their academic background or prior skills. Many of these students were very interested in the class but decided not to register for the class despite their interests. Many of the students that I reached out too shared a different perspective when it came to the course. They had imposter syndrome, believing that since they were freshman that this class was too advanced for them. Or that since they don’t have this background that they shouldn’t take this class. When speaking to them, I wasn’t trying to change their mind but have them see something that’s already there and that’s their ability and interest in the subject. When I would talk to the students, they gave me reasons why this class isn’t meant for them but would still tell me about how much it interests them. So then we focused on the latter and that helped them to grow their confidence in their ability in the class. We also did check ins to make sure that they felt confident and if they had any questions that they would be addressed as well.

* 1. Acted with courage

I think I can talk about the time when a professor got mad at me for helping students create a final exam study document. the context is that a had a group of students that would show up at my office hours for astronomy and the professor didn't make them or didnt' rpovide a study guide for them. This is a frehsman level class and they didn’t know how to prepare for the exam. The students don’t come from STEM backgrounds, so they were very nervous about this exam. When the students come to office hours they would ask me if I could do a practice exam for them but I told them that I couldn’t do it for them but I can help them make one. I guided them into making their own by first going through the slides with them then seeing where they got stuck. From there I would have students that were more comfortable in this subject take a lead and develop questions as other students covered other subjects. Then we would separate into groups while everyone would take notes within their groups and teach each other. From there the groups would look at each other’s notes and develop a larger final exam study guide. The professor found out about this and talked to me one on one about doing this for the students. The professor felt that it was unfair that I was doing all of this for the students and that I was doing all of the work for them. I was reluctant at first but decided to speak with him about the matter. I understood where he was coming from but I also explained him my perspective too. He was a new professor and this was his first time teaching undergraduate students from this background. So I explained to him that they don’t have the same background and have different study methods. And they are also freshman in their first STEM class ever and a lot of them were intimidated by that. I know it’s wrong to do the work for them, but as a teaching assistant its my job to guide and help them especially since they’re freshman. It’s not only their first time learning this material but also learning how to study for college.

* 1. Fell short of expectations

When I got into accepted into the University of Illinois Urbana-Champaign, it was for a Ph.D in Aerospace Engineering. Unforntualey, the professor that I wanted to work with did not have funding available so I switched my degree to a Masters Degree. From there, I was still without funding and was applying to assistantships and research positions. The program is usually 2 years but to save costs on loans since I was out of state, I decided to do it in one year. My first semester, I had to take out over 30k worth of loans for just that semester. To make ends meet I also worked two part time jobs at the university, and in order to finish my degree in that one year, I also took 5 classes. I was scared that I had to take out more loans for 2 years so that’s why I overloaded myself. And due to that, my grades suffered. I ended my first semester with a 2.78 GPA and was placed on academic probation. Forntauly that next semester, I was able to find a teaching assistaship which covered my tuition and fees for that semester. I also was able to find a research assistantship with my future advisor who would then be able to fund an extra year of my masters. In the end looking back at it, I did the best that I could in the moment. That second semester I was juggling 4 jobs and taking 3 classes. I was able to learn from my mistakes first semester and sought more help in my classes by engaging more with professors and working with students. If I wasn’t able to bring my cumalitve GPA up to over a 3.00 that semester, then I would be placed on leave. That semester I was able to earn a 3.66 GPA and bring my overall GPA up to a 3.12. From there, since I was able to acquire funding for another year, I was also able to retake classes and come out with a 4.00 and 3.33 fall and semester GPA, bringing my 2.78 to a 3.28.

My first semester of graduate school I was not prepared for the

1. Please tell us eight improbable facts about you. These could include facts that people wouldn’t expect to be true and/or facts that others are surprised to learn about you. \* (*All fields required*)
   1. I almost got dismissed from my first semester of grad school due to academic probation
   2. I worked 4 jobs during my first graduate degree and worked full time while pursuing my second graduate degree
   3. I’m the first person in my family to pursue education beyond 8th grade and by extension, high school, undergrad, and graduate school
   4. I’ve had over 25 jobs my entire life, where my first job was fixing houses and cars with my uncle and dad
   5. I’ve travelled across the country 3 times pursuing different career opportunities
   6. I’ve developed, tested, and implemented software and hardware that are onboard spacecrafts in orbit
   7. I used to be a math teacher and after school program coordinator at the boys and girls club
   8. Although being Vietnamese and growing up in a Vietnamese household, I didn’t grow up eating Vietnamese food.
2. Connect the dots. How have the influences in your life shaped you? \* (Limit: 550 words)

Growing up food was so important to my family and I; it was a means to get together to not only fill our stomachs but our hearts as well by spending time together. My parents are both refuges from the Vietnam war. Coming over and starting a new life, they traded the struggle of war and almost losing their lives for a second chance at life here in the states. They did everything they could to raise my 4 siblings and I. We grew up in section 8 housing and government assistance. My mom would always know how to make food stretch, somehow feeding four kids. Luckily, we were offered free breakfast and lunch at school, and they would send us home with perishable food. My mom would somehow make all that food stretch and was able to feed all 4 kids off that. For dinner she would often make hard shell tacos or fry eggs with rice and fish sauce. 1 egg for each person in a family of 6, half a carton of eggs when a dozen used to be about $2 that would be dinner for our family for years. Sometimes dinner would be a combo dinner from a Burger King, KFC, or Subway coupon. I was always excited for school because they would have my favorite things in the cafeteria, my favorite being breakfast pizza in the morning and crispitos for lunch. My parents did the best they could to raise my siblings and I, even though they didn’t have the role models they needed. My mother’s father was a prisoner of war for nearly a decade, and she didn’t even meet him until he was released. My father fled with 2 out of his 7 siblings when he was just 11 years old, losing his father along the way. That generational trauma of war, poverty, and survival played out in their marriage as well and led to emotional and physical abuse which led to their separation. School was always a safe space for me, I was always fed and taken care from 8 am to 3 pm 180 days of the year. This safe environment was where I was able to cultivate a deep sense of learning and exploring. In kindergarten my passion for space started when I found a series of books about the solar system. From there I was hooked on space. The first things I learned about were Kepler’s Law’s and Galileo’s life and how he was excommunicated by his ideas. Growing up too my parents did not have a healthy relationship dynamic and I had to be the one to get law enforcement involved. I struggled not having an immediate family male role model to look up to growing up. That’s why school and education felt so safe for me. All the things that I was lacking at home, food, a role model, people that would listen and care for me, was all found at school. That made education and learning important to me all throughout my life. I was the first in my family to graduate 8th grade, and go onto high school. When it came to what to do after high school, I didn’t know what I wanted to do honestly. I was worried about the finances, but I knew that I wanted to go to college and fgure it out. Forntualty I was blessed to have gotten a full ride scholarship to Iowa State University. I am eternally grateful for that as I was able to focus on school and extracurriclurs during my udnergrate career. I faced obstacles along the way, I had difficulty navigating college as I didn’t have a support system. I had to figure it out as a go and only then with hindsight would things be clear. I didn’t know about internships, fellowships, and so forth. I joined the McNairs scholars program to help prepare myself for grad school. I knew that I wanted to become a professor and create research program for students like myself. Students that had to figure it out as they go. Students who are first generation and didn’t have the recources or opportnites or knowledge at the time but were still determined to figure it out. From there I went on to get my masters at the Univeristy of Illinois Urbancha Champing. I was not able to secure funding and had to take out loans my first semester. To reduce the cost of my education, I took on 5 classes my first semester to finish my degree faster. To make ends meet I also was working two jobs on campus. I quickly became burnt out and after my first semester, was on academic probation with a 2.78 GPA. I ended my first semester with a 2.78 GPA and was placed on academic probation. Forntauly that next semester, I was able to find a teaching assistaship which covered my tuition and fees for that semester. I also was able to find a research assistantship with my future advisor who would then be able to fund an extra year of my masters. In the end looking back at it, I did the best that I could in the moment. That second semester I was juggling 4 jobs and taking 3 classes. I was able to learn from my mistakes first semester and sought more help in my classes by engaging more with professors and working with students. If I wasn’t able to bring my cumalitve GPA up to over a 3.00 that semester, then I would be placed on leave. That semester I was able to earn a 3.66 GPA and bring my overall GPA up to a 3.12. From there, since I was able to acquire funding for another year, I was also able to retake classes and come out with a 4.00 and 3.33 fall and semester GPA, bringing my 2.78 to a 3.28. During that time I took on 2 more jobs, working 4 total to make ends meet. Before graduating, I had a discussion with my advisor about my next steps. I still had my goal of becoming a professor but I was lacking in two areas, my academic and technical abilities. That’s when I decided to pursue another masters degree but now in electrical engineering with a focus in space systems engineering. I was planning on working full time as well and decided to pursue internship opportunities along the way. I still wanted to develop my skills as a professor so my first semester, I started working as a youth development professional at the Boys and Girls Club where I taught third/foruth and fifth/sixth graders computer literacy after school. And during the school day, I taught pre-algebra, algbrea I/II, precualucs, and calcusus to high schoolers. These students reminded me of myself on how they also came from difficult backgroudns and that was a key strength that I was able to develop in working with them. From there I was able to travel across the country to work at aerospace companies such as Blue Origin, Blue Canyon Technologies, and MIT Lincoln Laboratory. Where I’ve been able to work on software and hardware components for spacecrafts.