Written Summary

I chose Aerospace Engineering as my first major back in undergraduate years because I did not want to work on building the next "Uber of salsa dancing" or "Robinhood of planning trips". I wanted to contribute to massive scale aero/astro projects that advance humanity towards a better life, while being driven by a technical engineering-first culture. I view my career as a desire to work on challenging projects and contribute meaningfully. I'm not monetarily driven as I think money/happiness will follow from following your passions, and life is too short to be stuck in a job you don't feel satisfaction from. I've watched relatives retire early from jobs/businesses they hate, and sit around for years thinking what to do next with signs of burnout still present years later. My personal outlook is that your career is part of your personal development journey and not something to rush through with no end goal in mind, as the journey is part of the end goal. While I recognize each job may get repetitive after a while, the mission and its impact stays. I have enjoyed working on the programs I have in the aero industry, but they have all aligned with more retrofitting past, older aerospace products with new capabilities. I would love to be close to the ground floor of developing new astro products at Blue Origin because of the challenges they present and their potential for advancing interest in the field. The problems dealing with access to space and space flight are incredibly fascinating to me, and the level of technical detail and challenges to consider for even the smallest adjustment to products is exciting. I would like to look back at my career and know I played a small part in future generations' ability to explore space further, past the stage it's at now where it's still sort of pioneering accomplishments that have taken place in the last 50 or so years.

Without companies like Blue Origin, SpaceX, Virgin Galactic, etc… we could all still be spinning wheels on accomplishing space exploration goals. The private industry's advancements help show off the true potential of what can be accomplished in a relatively short amount of time. Unless companies like Blue Origin exist to push boundaries, potential for accomplishing space exploration and visiting/habiting Mars will be shrouded behind bureaucracy and only using established practices with little concern for cost and practicality. I was watching a 60 Minutes episode on the SLS, it was contracted out to be done in 6 years at a budget of $6 billion. It has now taken 11 years and $20 billion with only one test fire. There's enough evidence to suggest if companies have little incentive to innovate and cost is not a massive concern, then products will continue to suffer massive delays and over-budget costs while pushing out only slight upgrades over previous products. Blue Origin's short-term setbacks pale in comparison to the value it adds to the field in adding competition and looking for alternative ways of accomplishing complicated space missions. By setting ambitious goals like reaching Mars by a certain year or developing reusable launch vehicles, engineers are forced to look at problems in a new light to come up with more sustainable, outward-looking products. These advancements are necessary for accomplishing goals that have never been accomplished before. Passion for the product goes a long ways towards accomplishing ambitious goals. It is easy to abstract away how much this means at a program/organization/company level, but when people are excited about the mission and excited about what they work on, it can make a world's (no pun intended) difference in their day-to-day work.

I've seen a renewed interest in space exploration in the last decade, and think there's a number of avenues to make it practical while supporting the vast R&D potential. Funding may not be as big of a concern for Blue Origin as other companies, but on Blue Origin's journey to space exploration there's numerous sources of revenue that can stem from the innovation taking place. I do not claim to be a domain expert on sourcing revenue streams, but it's easy to see connections from the work taking place and how they can be broken down into short-term revenue streams. Additive manufacturing techniques can be applicable to other industries' practices for producing precise parts at a fast pace. The data fusion technologies developed for reusable launch vehicles may apply to the autonomous driving industry. Tangentially related goals like asteroid mining start to seem within grasp. Bezos' trip into space could cement Blue Origin's place in space tourism. With creative minds involved and a continual emphasis on innovation, the sky is the limit for revenue streams. Aero and defense industry projects have historically played a big part in modern technologies, such as DARPA's creation of the Internet. As long as employees continue to see the importance of their work and continue to focus on creating a technically-sound product, the money will come. Despite NASA budget cuts in recent years, I believe the public very much wants to continue to push space exploration and are excitedly looking on to see what will happen next. It's exciting to think of all the contributions Blue Origin might make to future technologies, and all the opportunity this gives for developing new products. Blue Origin is early enough to catch the wave and I believe it will have a head place at the table for years to come in space exploration. On an everyday work level, it's interesting to think about a job where I can think of new ways of doing things and solving these hard problems.

I did not grow up a space fanatic but always had a desire to want to work on interesting problems. I do remember watching shows/movies like 2001: A Space Odyssey, Alien, E.T., Star Wars, and Apollo and enjoying myself, however, I think my interest spans more on thinking in broader, philosophical terms. I used to really enjoy researching hot physics topics like string theory, black holes, multi-dimensions, propulsion, etc… This is when I started to develop a heavy interest in aerospace engineering as I wanted to contribute to problems impacting humanity and wanted a career challenged with difficult problems. Understanding our universe enthralls me and I cannot think of a better career to explore this interest than space exploration. I've worked to develop my abilities in computer science/software/systems because I want to combine some areas of interest with aero knowledge to find a niche way I can contribute.

Within my lifetime, I think humanity could establish a colony on Mars. With nuclear threats and other environmental anomalous events posing a threat to our survival on Earth, it's important to have alternative plans in place. Space is the last frontier. Just thinking about space and our limited discovery thus far is enough to make me ponder about how little we know about our universe, and how much further we have to go. Space exploration and habitation are important for the evolution of our species to one previously limited to its conquest of only Earth and in very limited cases, the moon. I view general space visitation and the habitation of Mars as the first stepping stone in a continual journey. Just as today's humans look at the primitivity of Neanderthals and how far we've come as a species, future interstellar humans could hold this same view of today's humans which is astounding to

think about. Being a part of Blue Origin would give me a chance to see past short-term materialism 99% of companies seek to exploit and contribute to the seeding stages of humanity's growth into an interstellar species.