Amid a crowd of applicants to the WHAT PROGRAM program at ENTER UNIVERSITY HERE, I am not a typical applicant. In May I finished my B.S. in mechanical engineering from Lehigh University with minors in aerospace and business. Upon completion of my degree I began work in industry for the jet engine manufacturer Pratt & Whitney, the finest makers of jet engines in the world. Still at Pratt & Whitney, I work as a software developer on projects at the intersection of aerospace engineering and computer science. While I do not have a formal degree in computer science or another related field, I believe I have the skills and ability to succeed in WHAT PROGRAM at ENTER UNIVERSITY HERE. And upon graduation from ENTER UNIVERSITY HERE, the accumulated combination of skills in mechanical engineering, aerospace, and programming will give me both a unique toolset and the ability to effect change in innovative, cross-discipline projects in the aerospace industry.

First, I am an excellent mechanical engineer. My first internship was at Alcatel-Lucent Bell Labs, a research and scientific development community which has made its mark numerous times throughout science. The organization has been home to 8 Nobel Prize winners, and is known for many innovations in science, including the discovery of cosmic microwave background radiation, the invention of the transistor, and C++ programming language. In this internship I was responsible for thermal, fluid flow, and acoustic testing of 4G LTE and eventual 5G technologies. As a sophomore in college and one of the youngest interns, I was elected to be the Presentation Day Coordinator for the final presentations because of my work ethic and organizational skills.

My second internship was with the company I work at today, Pratt & Whitney. For my internship I worked on creating and expanding interest in a classification tool for external components. Throughout the course of 10 weeks I created a framework and classified over 18,000 high re-use components using a data sorting algorithm I wrote in MATLAB. As a reward for my efforts, I earned the top marks in all categories for my end-of-summer review, an uncommon feat. I left on the last day of the summer with an offer letter for full time employment, and excitement to return full time to a leader in the aerospace industry.

Computer science and programming have accentuated my learning in throughout my college experience, as I have actively sought out assignments and projects which would flex my skills in the discipline. My freshman year I excelled in the MATLAB/Arduino programming lab, to the extent that I was offered and accepted a position as a Teacher’s Assistant for the class. Building off my earlier success, being able to write code was a driving factor to my success in control systems and control systems lab and ability to design controllers to increase performance of complex dynamic systems. For my research in orthopedic healing of tibia fractures with Hannah Dailey I wrote a program which generated novel plots that overlaid theoretical tissue behavior based on hydrostatic and orthopedic strains on top of real world callus zones.

I should add that writing software is also something that I enjoy practicing in my leisure. For example, I taught myself C++ writing a dungeon crawl game the summer of my freshman year. On a family vacation when we didn’t have poker chips, I wrote a turn based program to keep track of the amount of remaining funds each family member had remaining. Just recently, I wrote a computer program to complete Sudoku puzzles because I thought it would be satisfying to watch a computer do in seconds what would take me 30 minutes to do by hand (it really was satisfying). And while these small problems are fun to break out logically and tackle with code, my goal is to be able to effectively and confidently tackle problems with larger scope.

Upon my return to Pratt & Whitney after graduation, I realized just how many fascinating projects in industry lie in the cross-discipline region of aerospace and computer science. For example, at Pratt & Whitney one project I was exposed to was the DART project. DART is a tool used to reduce design iteration time for compressor airfoils. In a given design space, DART works by running finite element analysis on multiple permutations of a given parametric airfoil model over a batch processing system. It then takes the results of these runs and emulates expected solutions over the design space. Using the emulators created by DART, an engineer can inspect an airfoil for design pertinent criteria such as modal frequencies, stress concentrations, and expected lifetime of the part. The value added by DART is this inspection process, which would take hours using traditional finite element analysis, takes only seconds. And this is just one of the intriguing projects being tackled in industry right now. There are many other opportunities to optimize processes or improve quality, but there is a stark shortage of people with the necessary talent to attempt problems such as these. With a master’s degree in WHAT PROGRAM from ENTER UNIVERSITY HERE, I can become a unique commodity in industry, able to link mechanical engineering, aerospace and programming in a way that others would not.

Add some stuff about the university. Talk about some programs or specialties that interest me. If they have a decent aero program, or any aero program, talk about it and how that was important to my selection process, as they are a university which balances my interests. yadayada

Another reason for my consideration of ENTER UNIVERSITY HERE is the robust online program offered. I want to simultaneously expand my industry knowledge by working on real-world, market problems, and expand my horizons through formal learning through a university. Completing a degree program online gives me the distinctive opportunity to achieve both, and directly apply knowledge to current industry problems in real-time.