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To whom it may concern,

I am a physics major at Haverford college. I finish my undergraduate degree December 2020, but I am currently enrolled in the 4+1 program at my college. This program allows me to complete my four years at Haverford, and I attend the University of Pennsylvania for 1 year. At the end of my 5 years, I will have a Bachelors of Physics and a Masters of Mechanical Engineering. I will finish the program December 2021. To accomplish this, I supplement my course load with various engineering classes at the University of Pennsylvania. This has allowed me to become familiar with the core of physics as well as various engineering technologies such as Solid Works and Ansys. Professionally, I have done research in fluid dynamics, investigating the effect of viscoelasticity on lubrication forces. I have also had various jobs that have involved an intense degree of coding, this includes my time as a Digital Scholar; my time working for the City of Miami Fire Department; and to a lesser extent my time as a student worker for Haverford College's IT department.

With regard to my ability to meet the specific requirements of this job :

Fabrication and Design I have worked on several projects that have required extensive use of 3D modeling softwares like Solid works and Fusion 360. For example, in my research of lubrication forces I had to use Solid Works to design the apparatuses I used for testing. Moreover, I have taken several classes on how to efficiently use Solid Works, and have made various 3D technologies that I will happily discuss in an interview. My formal training and professional experience with Solid works will make me a great fit for your organization.

Electrical Design As a physics major, I am required to have an intimate understanding of circuitry. As a result, I have taken several hands on labs that have required me to design, create, and trouble shoot circuits. I have used circuits to make a rudimentary coffee maker using an Arduino and a step motor, and I have used circuits to analyze physical phenomenon like the Boltzmann constant.

Coding I have done a plethora of projects that have required an intense degree of coding. For my thesis on lubrication forces, I used Matlab to write image processing scripts that tracked the position of a falling sphere and simultaneously pulled velocity and acceleration to analyze forces on the sphere. I have also worked as a digital scholar. As a digital scholar, I was required to use Django, a python based web framework, to create interactive,beautiful websites. I have also taken a plethora of programming classes. To name a few of the classes, I have taken a C++ class, a Java class, and an object oriented programming class. I believe both my academic and professional experience will make me a great asset to your team.

I hope to discuss more with you in person over an interview. More information on my qualifications can be seen on my resume.

Thank you for your time,
Shaun Fedrick