Greetings,

I would like to apply for the Solution Platform Advisor Internship this summer. I am now a sophomore student at Rose-Hulman and my major is computer science. I've learned web programming and data structures, which are two important courses related to this internship. I'm now engaging in a course that deals with database systems, and I believe my knowledge and experience can fit this position well. I'm also experienced in creating websites and algorithms, which may help me perform well during this internship.

In the Spring of 2020, I made a website called Voyage History, which is an online forum for history lovers and students to discuss and learn history. I independently compiled all the functions and code for this website in HTML, CSS, and JavaScript. This website has authentication and authorization functions that can identify users into admissions and readers. Readers may only post questions, read, and delete their posts while admissions control all the posts and entries. I programmed these functions with the help of BootStrap. Additionally, there's also an embedded encyclopedia on this website. I implemented the search engine and entries by using Algolia as the platform to store backend data. Once users type alphabets in the search bar, it may show all the related entry cards in alphabetical order. I could easily add, delete, check and adjust the entries in my backend. Through this project, I learned how to brainstorm ideas and design a project. I learned to use Figma to show the conception and anticipated results. My self-study ability was also enhanced as I learned many programming implementations by myself.

Another valuable experience was designing and implementing a system that estimates student population in different places. Using Python as the basic language, I implemented the theory of the Markov Chain, which is a mathematical theory that is used to predict objects' movements. I also did this project independently. Connecting cameras to a Raspberry Pi provided me with the base data, which were the numbers of students in different classrooms and places of a school. After that, the system predicts "the number of students in certain places after several hours" and gives the results to the screen, which is convenient and useful for students that may need access to this information.

I also took part in the First Robotics Competition as a team member of Team 6941. One contribution I did towards the robot was creating the function of grabbing the box. We twined two rubber belts around two horizontal bars and when the engine started to make bars rotate, the rubber belts rotated and generated a huge frictional force, big enough to execute the objective. I was also responsible for the repair work in the field of the competition. Through this experience, I learned how to cooperate with teammates and work under pressure, which is quite useful since such cooperation stimulated me to get involved and help others to reach our goal as a team.

I'm willing to have an opportunity to further train my programming abilities and get involved in big projects, making real contributions to society and making benefits to others. This web programming position will be valuable and support me in devoting myself to this field. Enclosed with this cover letter is my resume and if you are interested, please contact me through either phone ((812)-990-3629) or email (zhangy42@rose-hulman.edu).

Sincerely,

Yujie Zhang