I have finished my two-week course at Stanford Pre-Collegiate Studies. It went by like a whirlwind; I learned so much and still had the chance to connect with others, even through computer screens. I took the class at the Carbondale Community High School library from 10 am to 12 pm. The other students in my class will be attending eleventh or twelfth grade next year and come from nearly every corner of the globe. Our instructor, Ross Alexander, incited interesting conversations and introduced us to many new topics. He met with every student one-on-one to better understand us during the last week. I was able to talk to him about my experience at SPCS last year, how I used my coding experience to teach others in my community, and my plans for the future. I appreciated that the Summer Institutes staff made an effort to speak to every student and get feedback. In class, we learned by a mixture of lecture times and coding together as a group. The group codes we did were related to the work we were given to complete out of class. Ross walked us through the code together and constantly gave us chances to ask questions.

The problem sets we were given to do outside of class were very rigorous but enjoyable. It took me a few hours every day to finish and specific parts plagued our entire class with confusion. I often went to the office hours after class to hear and ask questions to absorb the material better. Over only 20 hours of lecture time, we have identified applications of artificial intelligence in everyday life, described what it means for machines to "learn," distinguished broadly between supervised, unsupervised, and reinforcement learning, and became mathematically proficient in the selected machine learning algorithms through a fundamental understanding of the basics of linear algebra, statistics, and optimization. During the second week, we touched on learning about Supervised learning. We were introduced to regression; least-squares linear regression (LSLR), and exact LSLR with the normal equations. The next day,

we learned how to approximate LSLR with gradient descent, and delved deeper into different types of gradient descent. Then, we talked about the bias-variance tradeoff, standardization, normalization, train-test schemes, and regularization. Near the end of our time together, we began our discussion on the fairness and ethics of AI and how it is shown in everyday life, such as face ID not picking up a darker person's face as clearly as a lighter person. On the last day, we talked about the complicated subject of neural networks and were shown interesting applications that used neural networks.

In addition to class time, I also took time to enjoy a few Student Life events. During the first week, I went to the Undergraduate Admissions Talk to better understand how to apply to college and how to express myself through the short essays. I went to the talent show and was impressed by the talents of my peers from all around the world! There were artists, singers, people playing instruments, dancers, and so many more interesting acts. My favorite act was a timelapse of a digital drawing of Taylor Swift! The confidence and friendliness of the performers made me excited to watch every act (and maybe participate in the talent show in the future).

My time "at" Stanford was wrapped up by the Commencement ceremony on Friday afternoon. All of the instructors spoke about their classes. It was a fulfilling moment when my instructor talked about our program. I am very lucky to have such a fun and connected class, as we were able to bond over our shared interests and became even closer because of our differences. After the ceremony, I got to know many of my classmates when we Zoomed and played different games. Although the virtual format makes it very difficult to create bonds with others, we all were able to connect over our love of coding, and it grew into new and exciting friendships! I am so grateful to the Garwin Family Foundation for allowing me to explore

Artificial Intelligence, which is unavailable to learn about in most places and being able to grow

the family the foundation has provided for me.