During the CAT Vehicle program, Sophia demonstrated an eagerness to utilize her skills in Python and background in machine learning as a data science major. Her knowledge of object-oriented programming enabled her to extract and organize CAN bus messages and to implement a YOLO object detection model to classify and localize COCO objects in test drive dashcam videos. When confronted with technical issues, Sophia was resourceful and patiently resolved them by investigating the subject and learning the necessary material to move forward. In preparation for undergraduate thesis work at her home institution, Sophia had taken several research courses and sharpened her writing abilities, which proved invaluable when producing a paper about her summer research.

Over the course of the program, Sophia gained experience using GitHub, LaTeX and creating a virtual environment on the UA HPC. She enhanced her ability to effectively communicate technical and conceptual material while collaborating with her project partner both virtually and in person. In addition, Sophia learned how to set short and long-term goals during the research process and how to consult technical papers. Sophia expanded her understanding of convolutional neural network semantics and developed an interest in computer vision, a field which she had only vaguely been aware of prior. Furthermore, she learned about the importance of relational databases in big data and now looks forward to exploring the ways she may use them in future endeavors, particularly in relation to spatial data science.