My contribution to this project was the research, design, and development of the models used in the project, and the performance analysis of the developed models. As the only person working on this project, I was responsible for every aspect of it. I researched contemporary strategies for time-series human activity recognition and used the knowledge gained to develop models capable of determine the risk level of a lift performed by a worker. I also tested the performance of the models and continually refined them for better performance, testing different strategies and architectures for the best possible outcome. Through the project, I gained experience in a number of machine learning technologies that I was able to utilize, such convolutional and long short-term memory neural networks. I also gained experience in performance analysis of activity recognition systems.

My main success was being able to develop two models that both achieve acceptable levels of accuracy for their respective use cases. Both achieved greater than 80% accuracy, which means they could be used in a real work setting for analysis of worker safety. One of the obstacles I faced was the time limit on the iterative process of refinement. There are many possible avenues for solving this problem at varying degrees of success, and part of the research process is trying to continually improve using different strategies. Since the project needed to be completed by a specific time, I had to know when to make the decision to stop refinement and compile the official achieved performance. Another significant obstacle was the size of the dataset I was working with, since the narrow use case of the project (lifting objects) meant that there were no publicly available large datasets and the data available was not extensive. Overall, I believe I achieved success with this project and was able to overcome the obstacles to gain experience.