

To Whom It May Concern:

August 29<sup>th</sup>, 2022

This is to certify that Miss Sheryl Chen (Menlo-Atherton High School, California) has done her internship under my supervision at the University of Maryland, College Park in Summer 2022. She has contributed more than eight hours per week over eight weeks. She initialized the project to analyze people's opinions on aiding Ukraine as expressed on Twitter, and see if these opinions aligned with the civilian casualties in the nation. She integrated information retrieval, natural language processing, and machine learning in her solution. She used Python programming language to search and download Twitter tweets, to perform sentiment and statistical analysis, to train and predict the outcomes and the impact.

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