Seasonal snow cover is one of the largest stores of freshwater on Earth. Accurately quantifying snow water equivalent (SWE) - the amount of water that would result from completely melting a snowpack - is paramount for water resource managers and the communities they serve. SWE can be computed from snow depth and density measurements. However, these products are not available globally. The forthcoming NISAR satellite mission aims to observe nearly all of Earth's terrestrial and ice surfaces at an approximate resolution of 10 meters, with a revisit frequency of twice every 12 days. The data from this mission will allow us to use repeat-pass interferometry to improve our understanding of snow dynamics. Our work uses NISAR-like data from the NASA JPL UAVSAR sensor to estimate total snow depth using machine learning (ML) algorithms. Our findings will contribute to the growing body of machine learning applications for snow property retrieval and could lead to developing a global snow depth prediction system that provides valuable information for water resource management, flood forecasting, and avalanche hazard assessment, provided that accurate and representative training data is available.