Jet tagging is a method of analyzing accelerator collision products. It performs labeling of jets according to the flavor of quark from which they arose. The subject of the thesis is to use machine learning and deep learning algorithms to build a top-tagging neural network and to prepare this network for being used as a support mechanism for the identification of four top decay events. Our top-tagger architecture is based on the successful Transformer architecture. To achieve the final form of top-tagger several variations in architecture and several sets of hyperparameters were tried. Subsequently, the best-performing model was chosen. The result of our thesis constitutes of tested functioning top-tagger. Moreover, an optimal setting for further use in identifying four top events was found. The output of our neural network will be suitable to use as additional information to the input of more versatile classification models thus creating space for improvement of those classification models.