

# A boosted kNN regressor with 66 million parameters

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We develop a nearest neighbor algorithm for regressor for the problem of estimating the energy of multi-TeV muons in a high-granularity calorimeter, exploiting the pattern of soft photon deposits around the muon track. The algorithm is heavily overparametrized by assigning weights and biases to the training events. Parameters are learnt by batch gradient descent. The performance compares favourably with that of xgboost and a neural network, although CPU consumption is orders of magnitude larger.

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