Task 4: Find Minimizing Velocity

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Consider x = L (the bottom of the storage unit). For n different fluid velocities v_k, we are given m different triplets $(t_{k_j}, v_{k_j}, T_{k_j})$, e.g. a training set of size nm.

Objective:
We are provided with a set of size l of noisy measurements of the temperature, and our task is to infer the velocity v of the fluid from these measurements.

My Approach:
I built an MLP to approximate the map (t, v) $\rightarrow$ T. Then, using this model, call it $ApproxT$ I took the measurements (t_i, T_i) and calculated the MSE of ApproxT(t_i, v) and T_i, i=1,...,l for each v between the minimum and maximum v-value in the training set, with small increments.
Then I repeated the process with a smaller increment size, concentrated around the minimizing v-value.