

Below you find problems, which are closely related to the planned research. Please provide your answers to both question. The goal of the task is to see if you can convincingly explain your own thoughts and ideas.

Problem: The task of learning is to find the compression mechanism that maximally compresses the input variable by removing irrelevance, while at the same time, preserving as much information as possible on the output variable. N. Tishby has recently made significant progress in understanding the learning process for deep neural networks (some presentations of him on this topic are posted on YouTube).

1. Please reflect on general terms the problem setting, what are the technical challenges and solution approaches?
2. What information-theoretic research questions arise from this problem?