

Statement of Contributions

Group 12: Sohbat Sandhu

A description of my contributions to the stages of the project:

- Formulating the problem: We both were recently introduced to Neural Networks and were curious about the inner workings of the experiment. When formulating the problem, we wrote the proposal for project together.
- Planning and designing the experiment: I was completely in charge of planning and designing the experiment. Used a synthetic data generator that generates binary data in certain patterns to assess the performance of the treatments on the Neural Network. I also designed the architecture for the neural network.
- Running the experiment: After designing the experiment, I was gathering the data and passed it towards my teammate for statistical analysis.
- Analysis: Most of the work was done by teammate with little input from me on how the analysis should be done.
- report preparation: I handled the writing the report up to the Details of the experiment design. We both were involved in Discussing and writing the conclusions.

A reflection on the importance of your contributions to the success of the project

My primary responsibilities were to design and implement the experimental framework. By leveraging my understanding of neural network architectures and hyperparameter optimization, I ensured that the experimental design was robust and comprehensive. The decision to employ a full-factorial design allowed us to capture detailed insights into the main effects and interactions of activation functions and learning rates. The contributions I made were instrumental in achieving the project's objectives: understanding the effects of activation functions and learning rates on non-linear pattern learning.

Comments on how the group divided the work.

I think the division of the work was fair as one design and ran the experiment while the other analyzed the results, we stuck to topics we were comfortable with to ensure maximum productivity.