AMATH 582: HOMEWORK 4

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Abstract. We're training fully connected neural networks! **TODO: Update**

1. Introduction and Overview

TODO: Update

I would like to acknowledge the critical use of the following packages in our analysis. Namely, Matplotlib was used to create all plots and animations [1]. Additionally, Scikit-learn was the primary source of using the PCA algorithm and other classification methods [2].

2. Theoretical Background

TODO: Update

2.1. Architecture. TODO: Update

2.2. Optimizer. TODO: Update

2.3. Learning Rate. TODO: Update

2.4. Momentum. TODO: Update

2.5. Dropout. TODO: Update

3. Algorithm Implementation and Development

TODO: Update

4. Computational Results

TODO: Update

5. Summary and Conclusions

TODO: Update

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References

[1] J. D. Hunter. Matplotlib: A 2d graphics environment. *Computing in Science & Engineering*, 9(3):90–95, 2007.
[2] F. Pedregosa, G. Varoquaux, A. Gramfort, V. Michel, B. Thirion, O. Grisel, M. Blondel, P. Prettenhofer, R. Weiss, V. Dubourg, J. Vanderplas, A. Passos, D. Cournapeau, M. Brucher, M. Perrot, and E. Duchesnay. Scikit-learn: Machine learning in Python. *Journal of Machine Learning Research*, 12:2825–2830, 2011.