Ian Beltrand

MNIST - NN PROJECT

Redes Neuronales Q1 2025

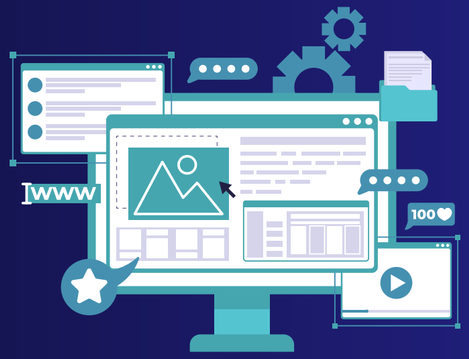
Marzo 27, 2025

INTRODUCTION

La finalidad de este proyecto es visualizar el desarrollo de diferentes redes neuronales o modelos que permitan discernir entre diferentes números escritos a mano. Se harán múltiples experimentos cambiando diferentes aspectos, añadiendo cada vez más, distintas capas de complejidad al modelo en búsqueda del mejor.

METHODOLOGY

Functional Code



Experiments

Testing

RESULTS

Estructura de Resultados

Resultados Training:

- Por Batches: Mejor Análisis
- Por Epochs: Más tiempo de Desarrollo

Resultados Testing

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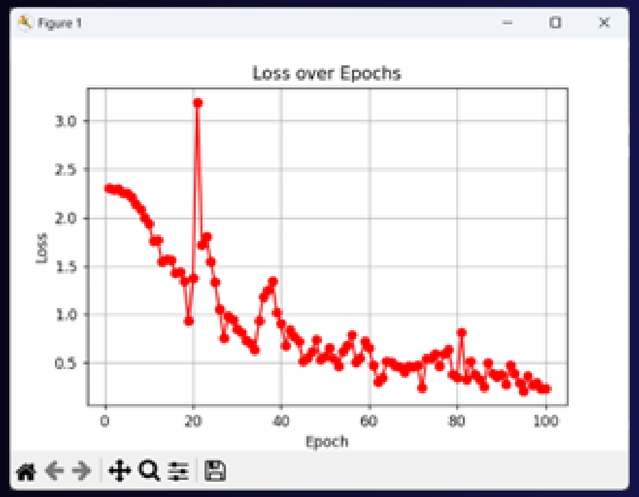
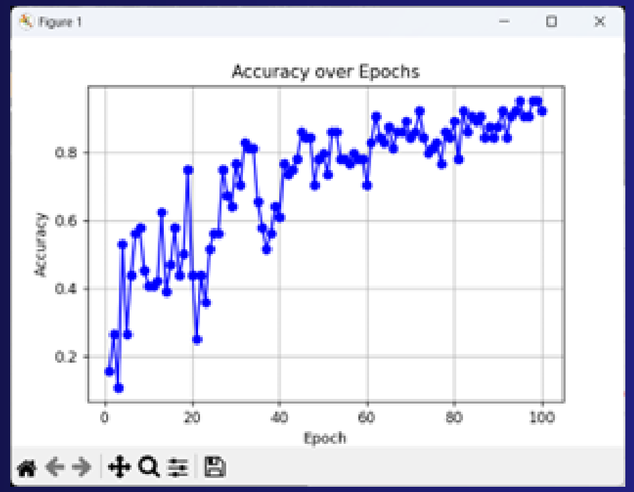
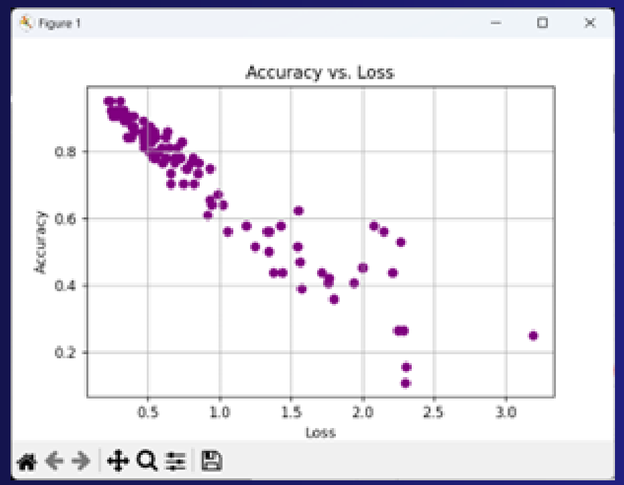
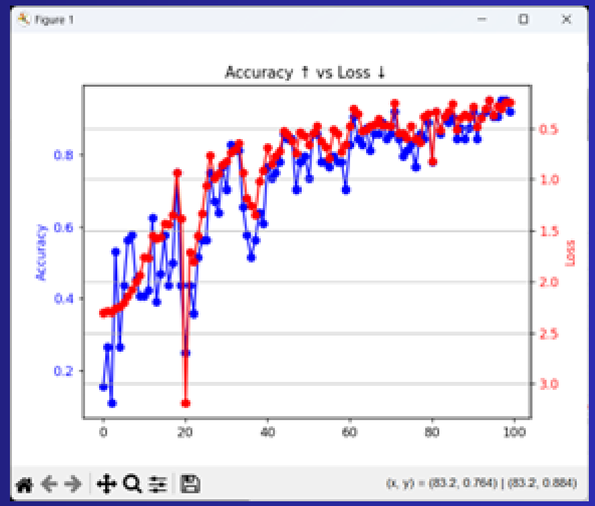
BASIC NN









Correlation: -0.9387

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BATCHES

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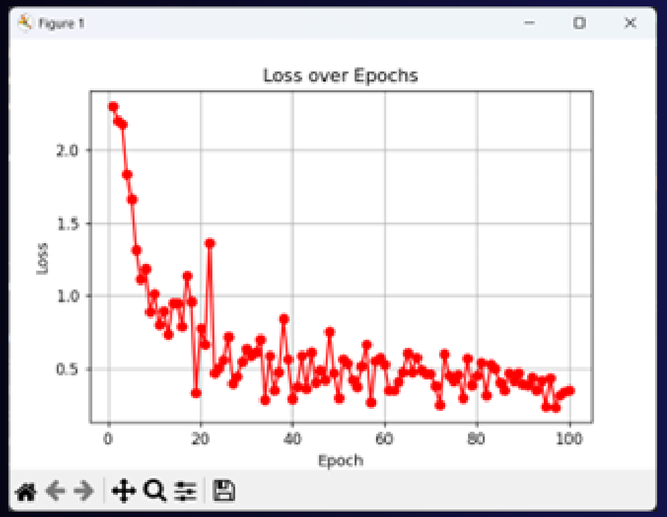
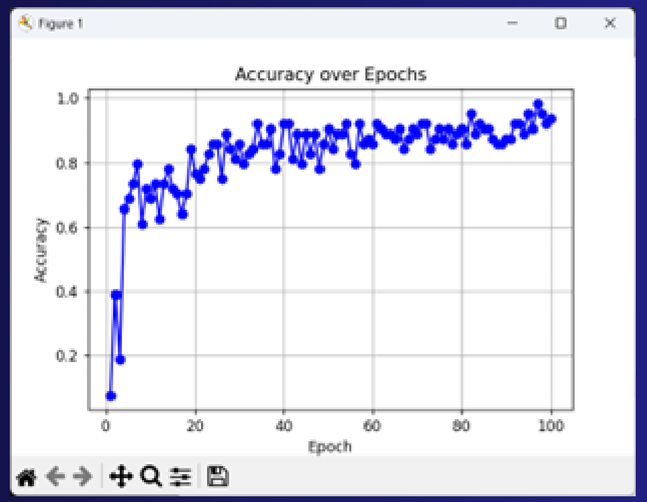
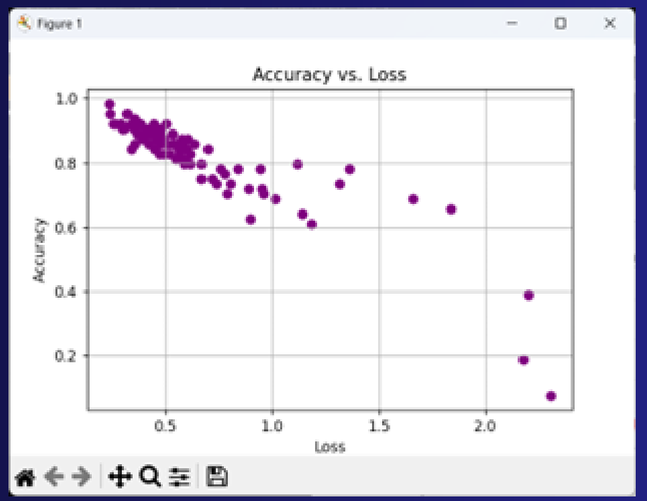
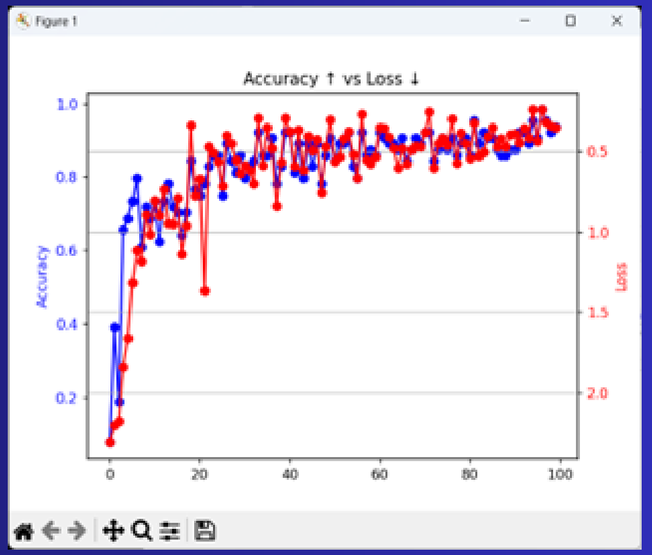
ADAM+L2 NN









Correlation: -0.9115

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BATCHES

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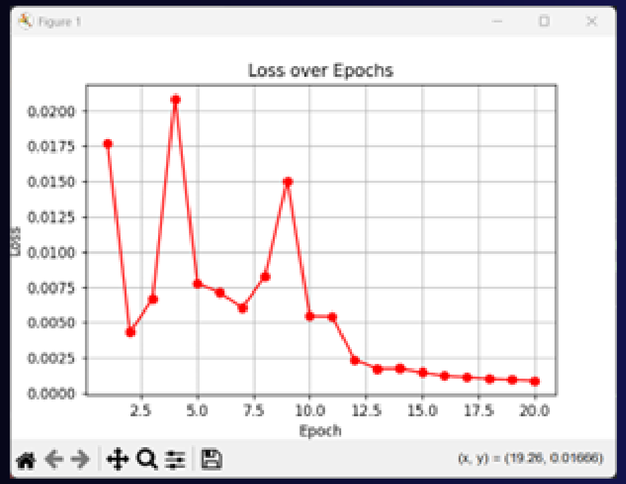
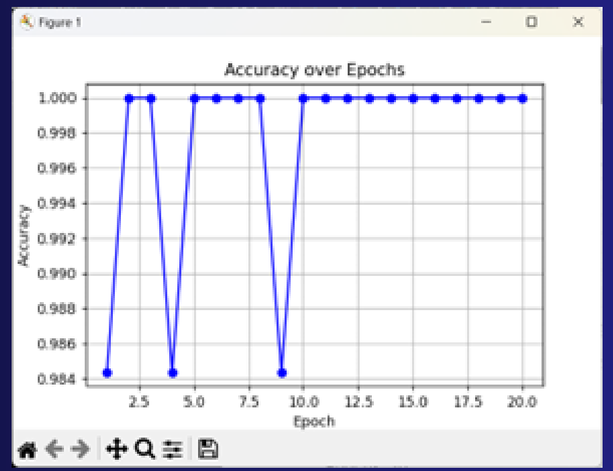
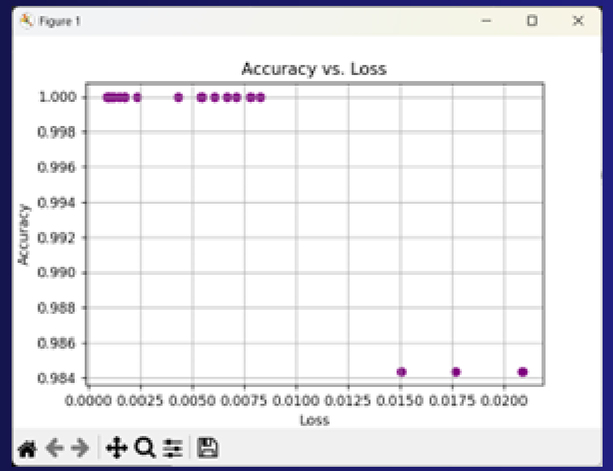
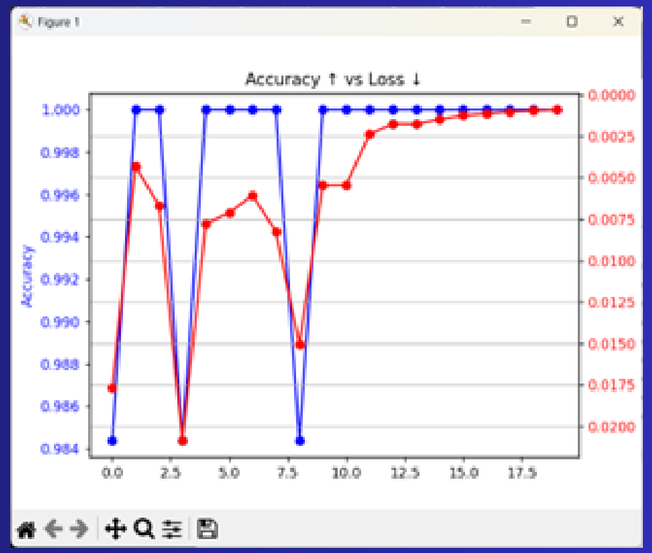
BASIC NN









Correlation: -0.8877

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EPOCHS

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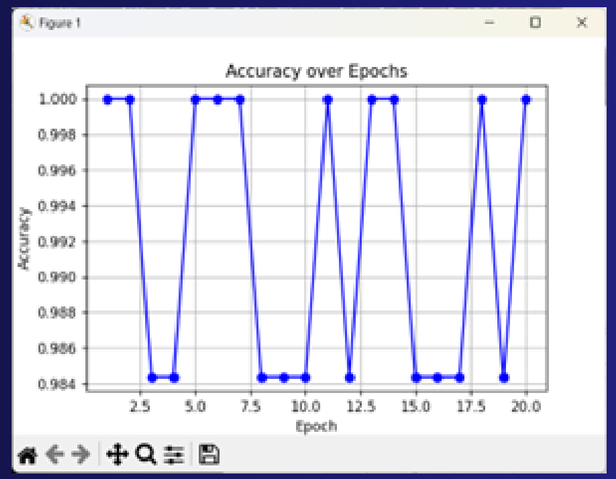
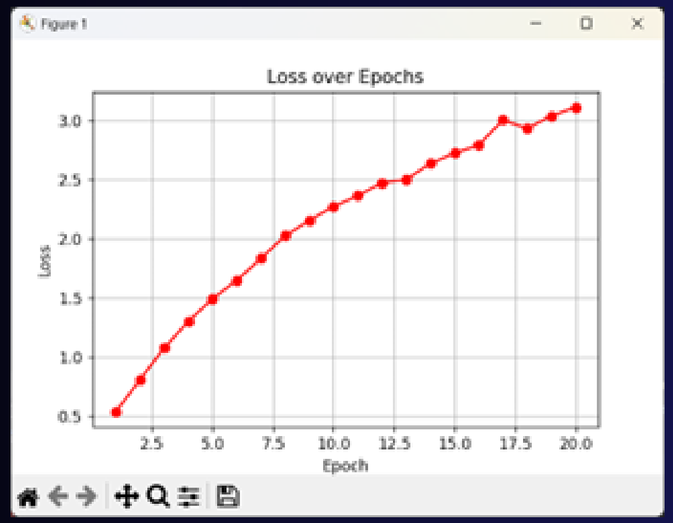
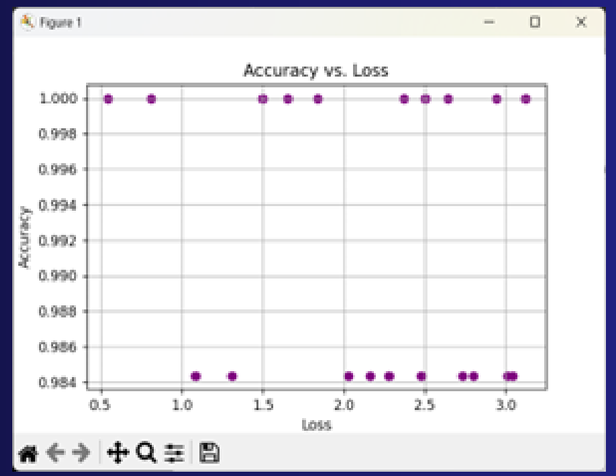
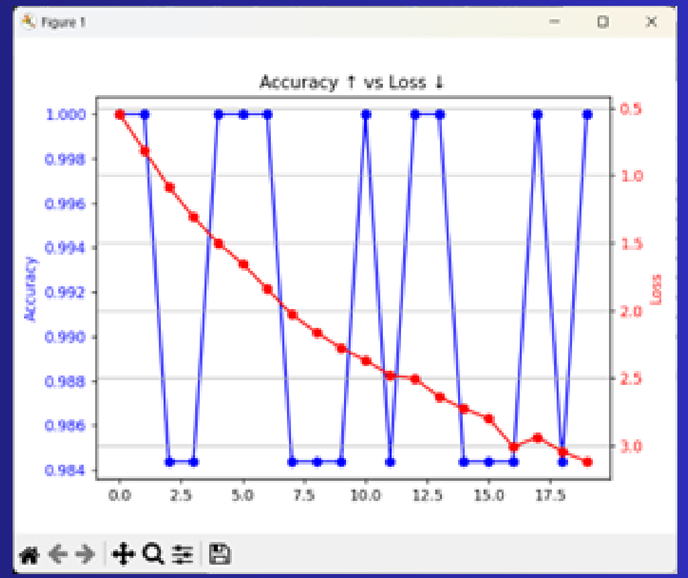
ADAM+L2 NN









Correlation: -0.1987

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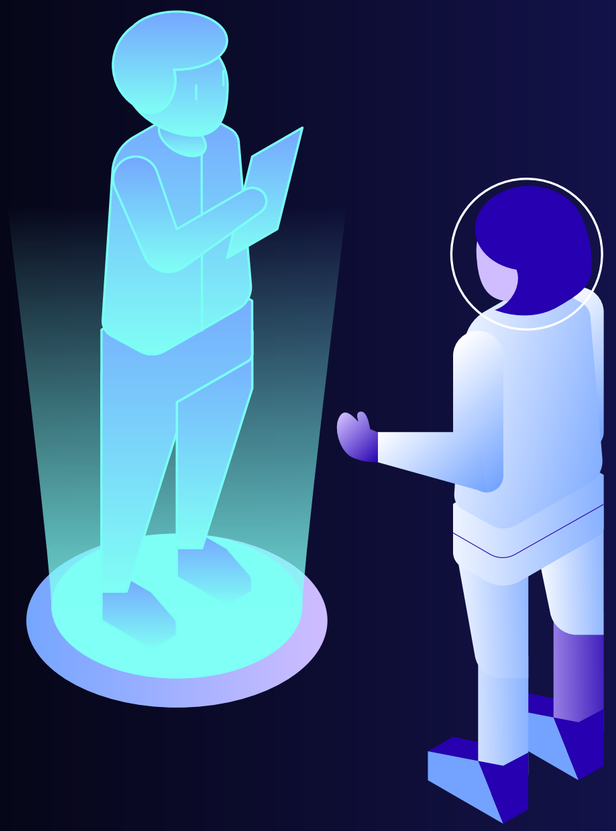
EPOCHS

TESTING RESULTS



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Test Adam Accuracy: 96.43%
Test L2 Accuracy: 96.60%
Test Basic Accuracy: 97.57%
Test Two_Layer Adam + L2 Accuracy: 86.75%
```

THANK YOU