

**WiDS ‘22 - ‘23 Final Documentation**

**Trapped in Neural Nets (UID : 26)**

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**Introduction to Problem Statement**

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| Build a classifier for MNIST from scratch using just [NumPy](https://numpy.org/) |

**Existing Resources**

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| Jupyter Notebook, lots of guidance and videos and journals for basic python, numpy and neural networks |

**Proposed Solution**

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| Constructing a Neural Network with 3 layers (Inner, hidden and Outer) and making it train to set the weights with known data and increases chances of correct predictions for each digit. |

**Methodology & Progress (Mention the work done week-wise)**

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| Week 1 : Basic Python, getting familiarized with the Jupyter notebook and python  Week 2 : NumPy, getting to know about many functions of NumPy and its faster computations  Week 3 : Intro to Neural Nets, getting guidance and watching videos and websites knowing how the basic neural network work  Week 4: Intro to the Assignment, and implementation of parts of Neural Network, this is where step-by-step I code my program up it with known data to update its weights to increase efficiency of my predictions. |

**Results**

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| https://github.com/kforkavya/WiDS\_Neural\_Net\_Project.git |

**Learning Value**

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| **Learnt a lot about Neural Nets, how they work and how to program them. Also, I have seen my code so many times that now the big length of the code seems just normal to me, unlike at the starting when I thought it would be very big.** |

**Tech-stack Used**

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| **Jupyter Notebook, my laptop, youtube, whatsapp and github for communication** |

**Suggestions for others**

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| Joining a project at WiDS was a success for me and I have learnt so much from it, and recommend other to do the same. |

**Contribution by each Team Member**

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| I worked hard on the project, trying to get guidance from mentors and coding all the parts up, and running the program multiple times to ensure its runnability. |

**References and Citations**

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| *No references used as such, maybe a book on faster computations in Python.* |