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

**<Project UID - Name>**

**<Mentors>**

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| **Team Member Name** | **Roll Number** | **Email-Id** |
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**Introduction to Problem Statement**

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| The problem statement is about classifying images using a trained Neural Network Model |

**Existing Resources**

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**Proposed Solution**

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| We can use Convolutional neural networks instead of ANN as CNN is position/spatially invariant.  On convulution of image array using a filter we can make our model spatially invariant  On maxpooling this array we can reduce the parameters but retain important data |

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

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| Week-1:  Learning basic concepts of neural networks  Week-2:  Using tensorflow framework and trained some models  Week-3:  Learning how to optimize neural networks, Digital image processing  Doing some examples  Week-4:  Learning how CNN works, fine tuning pre existing models |

**Results**

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| On using CNN our model recognizes an object even if the object shifts which is actually what we want  This is far better than ANN where we the model can’t detect when our model shifts/rotates etc |

**Learning Value**

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| **Learnt how to build Artificial neural networks when given a data**  **Learnt methods on how to optimize the model**  **Learnt concepts and working of CNN’s, fine tuning pre existing models** |

**Tech-stack Used**

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| **Tensorflow**  **numpy**  **matplotlib**  **sklearn(only few times)** |

**Suggestions for others**

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| CNN is quite good |

**Contribution by each Team Member**

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**References and Citations**

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| *Used the references given in resource doc* |