**PROJECT PROPOSAL**

**List of Team Members:**

1. Member 1
2. Member 2
3. Member 3

**Title:** Deep convolutional neural networks with transfer learning for automated brain image classification

**Citation:** Kaur, T., Gandhi, T.K. Deep convolutional neural networks with transfer learning for automated brain image classification. Machine Vision and Applications 31, 20 (2020). <https://doi.org/10.1007/s00138-020-01069-2>

**Number of citations:** As of 01-02-2024, the paper has been cited **115** times

**Timeline & Tasks:**

| **Tasks** | **Start Time** | **End Time** | **Person in charge** |
| --- | --- | --- | --- |
| Thorough understanding of the Paper | 05-02-2024 | 11-02-2024 | 1,2,3 |
| Data Collection & Analysis | 12-02-2024 | 18-02-2024 | 1 |
| Data PreProcessing | 19-02-2024 | 03-03-2024 | 2 |
| Feature Engineering | 04-03-2024 | 10-03-2024 | 3 |
| Implementation of the Models & Architectures | 11-03-2024 | 24-03-2024 | 1,2 |
| Implementation of Enhancements | 25-03-2024 | 07-04-2024 | 2,3 |
| Results & Analysis | 08-04-2024 | 18-04-2023 | 1,3 |
| Report Preparation | 18-04-2024 | 27-04-2023 | 1,2,3 |

**NOTE:** In the above research, authors have used pretrained models like Alexnet, Resnet50, GoogLeNet, VGG-16, Resnet101, VGG-19, Inceptionv3, and InceptionResNetV2 for MRI image classification using 5 different datasets and compared their performances. We will be using only 3 pretrained models (Alexnet, ResNet50 and VGG-16) on a single dataset (clinical datasets) because of lack of availability of computational resources.

**Enhancement we have planned:** Pretrained models will not get much learning from the current dataset (as they may be trained on other datasets, and we are using that learning), so we are planning to ensemble the learnings of the pretrained models using a CNN and make the final predictions. We will modify some layers in the pretrained model as in the paper, but at the end we will feed the model's final layer learnings as an input to a small CNN and get the final outputs from the CNN. This way we can use the learnings of each pretrained model and make final classifications.