

Project Guide (HW4)

File Descriptions

1. **auto.txt**: Contains configurations for running experiments with a shallow model. It includes parameters for neural network settings such as filters, kernel sizes, padding, activation, pool sizes, shuffle, and batch size.
2. **Fig1a.png, Fig1b.png**: Visual representations of the model architectures.
3. **Fig2_Validation Set Accuracy.png**: A graph showing the validation accuracy as a function of training epochs for both model types over different experimental settings.
4. **Fig3a. auto_5.png - Fig3e. unet_9.png**: Confusion matrices for each fold (F5 to F9) for both the auto and unet models, showing the accuracy of class predictions.
5. **Fig4_Test Accuracy Bar Chart.png**: A bar chart showing the test accuracies for both the shallow and deep networks across different folds.
6. **general_model.py**: Python script with imports and definitions for constructing neural networks using TensorFlow and Keras, including convolutional, pooling, and normalization layers.
7. **hw4.base.py**: Python script that integrates components such as data loading, model definitions, and utility functions, also setting up default plotting parameters for visualizations.
8. **plot_fig.py**: Python script for generating plots and handling visualizations post-model training. It is used for evaluating and reporting results, including confusion matrices and accuracy graphs.
9. **reflection.pdf**: A document reflecting on the learning outcomes, comparing the performance and qualitative differences between model outputs.
10. **UNET.txt**: Contains configurations for experiments using a deep model with U-net architecture, detailing neural network parameters and the inclusion of skip connections.