

Final Term Project

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Goal of Final Term Project

- Find the best model to fit the training data points
 - By using Scikit Learn
- Create a github repo and upload your code.
- Create a README file to explain your code
 - Explain what you do in your project
 - Explain the training dataset
 - Explain the algorithm you choose
 - Explain hyper-parameter of the function

- **Brain Tumor Classification**

- Brain Tumors are classified as: Benign Tumor, Malignant Tumor, Pituitary Tumor, etc.
- The folder contains MRI data.
- The images are split into Training and Testing folders.
- Each folder has more four subfolders.
- These folders have MRIs of respective tumor classes.

Data Explorer

Version 2 (93.08 MB)

- ▼ Testing
 - ▶ glioma_tumor
 - ▶ meningioma_tumor
 - ▶ no_tumor
 - ▶ pituitary_tumor
- ▼ Training
 - ▶ glioma_tumor
 - ▶ meningioma_tumor
 - ▶ no_tumor
 - ▶ pituitary_tumor

Summary

- ▼ 3264 files
 - ▶ .jpg 3264

- You can employ any method in **scikit learn package (Don't use other machine learning packages)**
- We have learned
 - Perceptron, Logistic regression
- We will learn
 - Decision Tree and Random Forest
- Other algorithms that are not covered in this course
 - Support Vector Machines
 - K-Nearest Neighbors
 - Gaussian Process Classification.
 - ...

- Optimize hyper-parameters
 - Train a model using training dataset
 - Measure accuracy of the trained model on test dataset
 - Test accuracy depends on hyper-parameters
 - Find the best hyper-parameter that shows the highest accuracy for the test dataset
- Submit the best model
- Score of final term project will depend on the accuracy of the submitted model
 - We rank your model based on the accuracy on the test dataset
 - The score will be determined based on the rank

- Submit your code (jupyter notebook file)
- Round 1
 - Submit your model by 12/02 (optional)
- Round 2
 - Submit your model by 12/09 (optional)
- Final Round
 - Submit your model by 12/16 (obligatory)

- Upload your project to the github repo
- Create a README file
 - contains information about the other files in a directory or archive of computer software
- A README file typically encompasses:
 - Configuration instructions
 - Operating instructions
 - Copyright and licensing information
 - Contact information for the distributor or author
- Submit the URL of the repo to the eclass homepage.
 - Deadline 12/16