**Data Science Project 7PAM2002-0509-2023**

**Semester C 2023**

**Logbook (Activities and GitHub submissions)**

**Student Name and ID:** Suleman Ajaz (22033960)

# **Project Title:** Brain Tumour Detection

**Supervisor:** Alyssa Drake

**Student GitHub URL:** [sulemanajaz · GitHub](https://github.com/sulemanajaz)

**Number of versions of the code submitted on GitHub:** 1

**User documentation has been submitted on GitHub:** YES

**Student GitHub URL has been shared with markers:** YES

**Log of Activities**

**Must record attendance at lectures and supervisions**

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| --- | --- | --- | --- | --- |
| **Week** | **Date** | **Activity**  **incl. lectures & supervisions** | **Reason if not attend lecture or supervision** | **Weekly project progress.**  **How lecture/supervision was helpful to your project.** |
| 1 | 6/17/2024 | Lecture 1 |  | Data collection from the Kaggle dataset "Brain Tumor MRI Dataset".  . |
|  | 6/18/2024 |  |  | Introduction to the project and initial guidance on data collection |
| 2 | 6/19/2024 | Lecture 2 |  | Conducted a literature review on machine learning models used for MRI classification. |
| 3 | 6/20/2024 |  |  | Helped refine research questions and understand current trends in MRI classification. |
|  | 6/21/2024 |  |  | Performed pre-processing, including data augmentation and splitting datasets. |
| 4 | 6/24/2024 | Lecture 3 |  | Selected the ResNet50, EfficientNet, and Xception models for experimentation. |
| 5 | 6/25/2024 |  |  | |  | | --- | | Discussed model selection strategies and model architectures during lectures. |  |  | | --- | |  | |
| 6 | 6/26/2024 | Lecture 4 |  | Supervision guided the training process and fine-tuning of hyperparameters. |
| 7 | 6/28/2024 |  |  | Trained all three models on the pre-processed dataset. |
| 8 | 7/8/2024 | Lecture 5 |  | |  | | --- | | Tested the web application with different MRI images to ensure functionality. |  |  | | --- | |  | |
| 9 | 7/10/2024 |  |  | Lecture 4 provided guidelines on effective documentation practices |

**Log of GitHub Submissions**

**Record the versions of code and user documentation submitted on GitHub**

|  |  |  |
| --- | --- | --- |
| **Date** | **Filename and version submitted to GitHub** | **Description of code and/or documentation submitted (what has been added since the previous version).** |
|  | |  | | --- | | ResNet50\_initial\_training\_v1.py |  |  | | --- | |  | | Initial code for training the ResNet50 model on the MRI dataset. |
|  | |  | | --- | | Xception\_model\_v1.py |  |  | | --- | |  | | |  | | --- | | Code for training and evaluating the Xception model. |  |  | | --- | |  | |
|  | |  | | --- | | MRI\_Classifier\_Web\_App\_v1.py |  |  | | --- | |  | | |  | | --- | | Code for the initial version of the web application with basic functionality. |  |  | | --- | |  | |
|  | |  | | --- | | MRI\_Classifier\_Web\_App\_v2.py |  |  | | --- | |  | | |  | | --- | | Updated web application code with integrated Xception model and additional features. |  |  | | --- | |  | |
|  | |  | | --- | | Project\_Report\_Final.pdf |  |  | | --- | |  | | Final project report document, including all analysis, results, and conclusions. |
|  | |  | | --- | | User\_Manual\_v1.pdf |  |  | | --- | |  | | User manual for the web application, detailing installation and usage instructions. |
|  | |  | | --- | | Logbook\_Final.docx |  |  | | --- | |  | | Final logbook documenting all project activities, lecture attendance, and GitHub submissions. |
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