

Dear Professor,

Here is the relevant literature that we have referenced for this project. It includes some previous research on Deep Reinforcement Learning (DRL) for Computer Vision, how DRL is implemented in a new domain, specifically using image datasets instead of simple and less realistic gym games. It also showcases previous approaches on modeling Markov Decision Processes for CV tasks and selecting, deploying RL algorithms for those tasks.

We also consulted two rare articles in the same field, on brain tumor classification and localization. However, we encountered difficulties in following the guidance outlined in these two articles. The reason is that the authors did not clearly and detailed specify the methodology settings, as well as the dataset used. We couldn't find any readily available resources from the mentioned articles. This led us to have some doubts and decide to pursue our own path.

The results we achieved on two completely new datasets, the [Brain Tumor MRI Dataset Cheng \[2017\]](#), [Amin et al. \[2022\]](#), and [Br35H - Brain Tumor Detection 2020](#), are very promising. These are the latest datasets in this field, with Br35H even being used for an annual Brain Tumor detection competition. The outcomes we obtained on these two datasets are quite positive and show promising signs in the initial stages. Currently, we are focusing more on the classification task and will continue to gradually improve the tumor localization task in the future through some interesting enhancement techniques and ideas, including potentially combining both tasks into a single end-to-end model.

Available Dataset:

- Brain Tumor MRI Dataset Cheng [2017], Amin et al. [2022]: <https://paperswithcode.com/dataset/brain-tumor-mri-dataset>
- Br35H :: Brain Tumor Detection 2020: [Br35H :: Brain Tumor Detection 2020 \(kaggle.com\)](#)