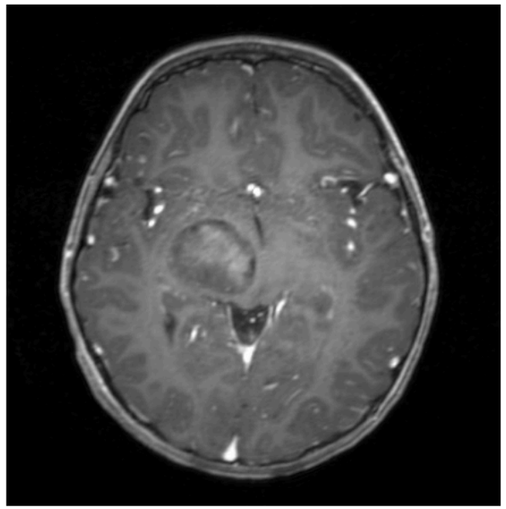
Question 3 (15 points): 12:55-13:15 (should submit by 13:20)

Suppose that the following two features (angular second moment and maximum probability) defined on a normalized gray-level co-occurrence matrix N are used to represent the MR image given below. This matrix N is calculated for the entire MR image. In this calculation, image pixels are grouped into $binNo = 8$ uniform bins according to their gray-level intensities and the distance parameter $d = (d_i, d_j)$ is selected as $d = (2, 2)$.

$$\text{Angular second moment} = \sum_i \sum_j N(i,j)^2$$

$$\text{Maximum probability} = \max_{ij} N(i,j)$$



This calculation will produce "not-that-meaningful" features to represent this image. What could be the reasons behind it? How could you alleviate the problems associated with these reasons?

Please note that one possible answer could be *"these features are not sufficient and we need to extract more features"*. However, this is a too generic answer, which we are not looking for. You need to answer this question considering the definitions of these features and the given image.

The quality of your proposal and its technical soundness will affect the points that you will get from this question.