Meeting's report for ELLEN WANG

Honour's student

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1. Agenda for today's meeting

- Jiyang to go through corrected image masks
- Clarification on Katana usage
- Clarification on any other questions

2. Work already completed

- Access to Katana acquired

3. Meeting Minutes from previous week

- Article to investigate: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3714437/
- T1 and T2 is good for structural imaging and for segmenting brain structures.
- T1: focus on brain structure with better contrasts between grey and white matter.
  - Grey matter is dark, white matter is brighter than grey matter and shows the fibre connecting neurons, CSF is the darkest.
- T2: grey-scale and reverse of T1 imaging
  - Grey matter is brighter than white-matter and CSF is the brightest.
- FLAIR: is a modification of T2 and suppresses the CSF signals by changing it to a dark colour.
  - A lacune is typically identified by a dark hole surrounded by white matter (a hyperintense region)
- Terminology confusion: lacunes and lacunar infarcts are interchangeable and defined following the neuroscience research paper.
- The lacune is a biomarker for SVD. SVD can present in different forms (recent small subcortical infarct, white matter hyperintensity, lacune, perivascular space, cerebral microbleed).
- Lacunes might be misinterpreted as other biomarkrs.
- The MRI dataset:
  - Will need some time relabelling the data.
  - 35 lacunes need to be relabelled.
  - There are 440 participants with scans, with only 35 brains having lacunes.
  - View with fslview/fsleyes
  - For each brain there are hundreds of thousands of voxels where only 5 or 6 are lacunes.
  - To remove as much noise as possible, the skull and soft tissuse will be removed.
  - Green regions/inner brain is more prone to lacunes so focus on those.
- There are other datasets upon request, but they haven't been labelled yet.
- Will have to go through them and relabel if needed.

4. Planned work after this meeting

- Go through MRI images
- Familiarise self with navigating MRI images and their data type.