Molly:

Hello members of the panel, today we are here to discuss the potential uses and applications of moustache detection and eigenfaces within the context of high-quality MRI images. We are a team of very capable individuals, well-versed in solving neuro-imaging challenges. Our solutions enable seamless data analysis and visualisation allowing efficient and accurate patient diagnosis.

Aiden :

When given the raw data from a 2D slice of a demo MRI our analysis is already able to create multiple different figures to assist professional insights.

By measuring diffusion speed and addressing signal noise we are able to create a mean diffusion graph. \*MD photo\*

By Isolating the magnitude of the principle direction of diffusion and instead mapping that to brightness an entirely different view of the brain gets formed.

Our team was also able to identify the direction of diffusion and use the RGB colour space to overlay this information into the same graph allowing professionals a quicker view of what’s important.

Sofia :

Given the opportunity, we are eager to further investigations through techniques such as fibre tracking maps, which provide insight into the structural connectivity of the brain, and analysis of 3D scans, in order to reproduce a comprehensive 3D model of the brain. This would significantly aid understanding of the anatomy of the brain and the speed at which diagnosis occurs.

Additionally we plan to decrease the subjectivity of manual diagnosis by developing software that automatically compares a patient’s scan to healthy brain tissue, and immediately locates anomalies whilst taking into account genetic and environmental factors such as age, gender.

Jason:

When provided a data set full of different faces, we are able to sort through these to identify which faces have a moustache and which do not.

We have a reliable method to perform this task, where we compile all faces together to create an ‘average’ face and calculate the difference between this average and each face within the data set.

A technique called singular value decompression is then applied to identify and sort these differences from most unique and identifiable to least, these images are called eigenfaces and are used to identify the components of a face, like a moustache.

Molly part 2:

This technique is not only applicable to faces and moustache detection but can easily be applied to form part of a digital health system that uses MRI data to identify brain tissue abnormalities.

This could be easily implemented by the team to interpret and evaluate images of MRIs instead of faces and can be altered to detect the presence of tumours, for example within the brain tissue, quickly flagging suspicious scans for faster diagnoses.

With your contract, our experienced and eager team could quickly and effectively improve the digital health system in reference to MRIs and brain tissue, Thank you for your time