STATEMENT OF INTEREST

Tenzin Nyima (MSc Computer Science)

Brain Signal Analysis: A Computational Neuroscience of Wellbeing

His Holiness the 14th Dalai Lama of Tibet repeatedly says, we need to focus on the "hygiene of emotions". Our brain is the hub of our emotions and it is the chief executive organ of our body that regulates the wellbeing of both the physical body and our emotions. When it is for one's own benefits, we need to know the workings of our emotions; and also, when it is for the benefits of the others, we need to know the workings of our brain especially through meditation. My interest in the study of the workings of the brain unfolds in two phases. One, accepting the importance of the "hygiene of emotion"; two, participate in the characterization of the effects of the good and the bad emotions via brain signal analysis.

The importance of "hygiene of emotion"

The Dalai Lama has inspired many to focus on the "hygiene of emotions". In the west, in-spite the excellent education system, the lives seem to be driven by profit margins and the financial gains where it has very little to do with the "hygiene of emotions". In many Eastern cultures like that of the Tibetan's, understanding the benefits of "kindness" is a key in one's own live and that of the society as a whole. More importantly, practicing how to be kind is a necessity. Meditation, as mentioned used by many in the Eastern culture, could be a useful technique how to promote kindness in oneself. According to the Dalai Lama incorporating the "hygiene of emotion" as an academic subject can tremendously enhance the wellbeing of all, although he warned may take a while to see the effects.

Brain Signal Analysis (BSA)

During my master's degree of Computer Science, my project is the application of Artificial Intelligence (AI) in brain signal analysis. The choice was clear for me between BSA and Blockchain when presented. The project covers topics on EEG and fMRI, forward inferencing and reverse inferencing on a meditation dataset. Machine Learning (ML) models like General Linear Model (GLM) and Support Vector Machines (SVM) are employed in the characterizations and classifications respectively. BSA with ML is relatively new and have great potential in the near future especially with the advent of newer AI modalities and ML packages. If the workings of the meditation can be characterised better through ML models, then we may find its applications in non-pharmacological clinical treatments of the mental health issues in the near future. And also, to be able to empirically visualize the benefits from the practice of meditation could do a great justice to this several-thousand-years-old tradition. The future of the field of BSA looks very optimistic.

With my decent grade with a little above A-grade in my MSc Computer Science degree specializing in Artificial Intelligence from Lakehead University, Canada, I have high confidence in making a tangible contribution in the characterization of the meditative brain via Machine Learning. With clear motivation from my spiritual leader and the belief in the power of meditation, I am poised to gaze at the various challenges laying ahead of me and determined to make small progresses every year. May the blessing of the Dalai Lama, my teachers, my parents will guide me through these trials and turbulence ahead of my journey. I dedicate all my efforts for the benefit of the whole sentient beings.

Sincerely
Tenzin Nyima