Statement of Motivation

Hello !

I am Aditya Choudhary, a 2nd year undergraduate pursuing B.S in Mathematics at IIT Bombay, Mumbai, India. I have a keen passion for applied mathematics and would love to contribute to the ongoing research and development in the scientific community.

I believe I meet the skill requirements mentioned for implementation and have the requisite mathematical background for ideation.

From the first time I heard of CERN and particle physics in 2012 through the news of “God particle” I was interested in knowing what all of the fuss is about and this project provides me with the opportunity to do so.

I had a general interest in Deep Learning since long, while working on the selection task I’ve further studied about Autoencoders and found their application in data compression as well as generation from features to be quite useful in academia and industries. I came across noisy autoencoders and VAEs which have immense potential in fields like image processing, data generators as well as fields like Reinforcement Learning that can utilise the dimension reduction capabilities of VAE.

I’ve also found the possibility of modelling new loss functions for autoencoders to be quite mathematically stimulating and challenging. I’ve also encountered research papers and through an overview of those, I am quite excited in implementing them in Baler.

Hope I would be able to contribute towards research in particle physics and collaborate under your guidance.