Work Plan:

**Title: Improving experimental and algorithmic benchmarks for testing unsupervised and supervised learning algorithms   
  
 Mr. Wagle will work to improve the experiments that we used to test our latest ThetA method which is available at <https://arxiv.org/abs/2102.07028> . We currently need more evaluation and benchmark tests that we have to experiment with. In addition we need to compare with other state of the art algorithms both for linearly separable clustering, nonlinearly separable clustering and classification problems. For this purpose Mr. Wagle will need to read the literature and code using Python and Cython. This project will provide extensive experience in machine learning.**

Number of work hours expected of the student:  
**5-15 hours**

Number of required meetings between the mentor and student:  
**1 per week. 25+ meetings**

Required Readings:

**Papers and code in python and cython relating to clustering**

The assessment produced and criteria for determining the student’s grade:  
**The grade will be determined by the quality of the code, level of understanding of the reading materials and the validation strategies used to verify the experiment.**