

As Computer Engineering students we find it critical that we continually attempt to engross ourselves in the future of computation and its various applications. In a world that is evermore intertwined with artificial intelligence and data-based modeling, we find it poignant to consider avenues in which we may familiarize ourselves with the application of such technologies. This proposal is concerned with explaining the project we are pursuing and the necessary requirements that will allow us to successfully complete it.

We are attempting to make a Predictive Academic Performance Model using machine learning techniques. The end goal of this project is to create a model such that a student's distinct feature-set may be used as an input for the model with the output resulting in a fairly accurate prediction of the student's future academic performance. The feature of the students that will be most prominently used is their prior academic performance. The machine learning algorithm will need to be trained using past academic scores from students. The scope of this model and by extension academic data is restricted to the faculty of engineering. We feel that given the largely homogeneous course structures, years of schooling, and correlative dispersion of course difficulty all data sets taken from the faculty of engineering would be comparative. As such we are asking for the academic data (GPAs per semester) and CGPAs of students (past and present) of the faculty of engineering to enable us to complete this project. One key concern we wish to address is that of the privacy of the scores in question. The utilization of such data is holistically focused on the creation of a machine learning algorithm. Crucially the identity of the students is immaterial to the research and should be completely removed from the data prior to its application in this research. This is to ensure that there can be no correlation between particular scores and students at any step of the process.

We believe that this research can have many key benefits for the Faculty of Engineering and Nile University at large. Firstly, the completion of such a model would have practical uses in helping students pursue better academic performance by relating their current projected score with their desired result. The trends and information gained from this project will also help the departments pursue better structured and

more effective teaching schemes. With regards to the university as a whole, the expertise gained in this project can readily be adapted to deal with the academic interests of other faculties as well. Beyond this it will foster a sense of student-oriented development, encouraging students to pursue projects that are meaningful, educational, and that attempt to solve problems and create solutions.