STATEMENT OF PURPOSE

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I opted for undergraduate program in mechanical engineering because I was interested in mechanisms of machines and processes involved in an industry (change the words- something more realistic or

complex and intricate mechanisms involved while making any product) . This statement of purpose is intended to give a brief idea of my learning in the field of mechanical engineering. Rather talk about why graduate program like Would like to continue discovering new concepts at a more advanced level.

I completed three projects under the guidance of college professors (was fortunate to work on three projects during my undergrad) in my undergraduate program.

The first was on Development of a Universal Greenness Index for Buildings through Multi-Criteria Decision Making of their Life-Cycle Parameters. Implemented Analytical hierarchy process on Matlab to rate system of buildings. While enjoying working on the project, this project introduced me to Matlab and its large functionalities.

used as a rating system for the buildings. I used MATLAB as a computational tool to develop a program that could rate the greenness of buildings (This was done on MATLAB. I got to learn the basic approach used to solve problems with research and also the functionality of MATLAB during this project.

The second project involved determination of Optimum Residence Time of Slabs in a Reheat Furnace.

This was done on fluent and the primary focus was radiation heat transfer.

In this project I used FLUENT as a tool for the combustion and heat transfer analysis. The focus was on radiation heat transfer. We worked on a model which could reduce the computational cost of obtaining the Residence Time. The project resulted in reduced computational cost of obtaining residence time compared to previous implementations.

I also worked on an industry problem with prof.xxx. Walmsleys India Pvt Ltd wanted CFD analysis for deciding the parameters of screw turbines. The performance of screw turbines was analysed based on various flow parameters.I used FLUENT for flow analysis.   I was able to derive an empirical relationship between RPM and power produced by the turbine. The results were also presented at a national level conference.

I had an opportunity to present this work in a national conference.

One of my Professors was approached by Walmsleys India Pvt Ltd. They needed a CFD analysis for deciding the parameters of screw turbines. He then chose and guided me in completion of this task.

I interned at xxx in my last semester. They work on xxx and my job was to predict energy consumption in cement manufacturing process.

Here I successfully completed a project based on data analysis. As a part of this, neural networks were used to predict the energy consumption in cement manufacturing process. My knowledge of MATLAB from the first project helped me in the computations. Later on ? We used global optimisation to get the optimum parameters. In addition ,Sensitivity analysis was done for energy consumption with respect to all the operating parameters.

The project culminated with me designing a desktop application that uses the feasible extreme values of all the parameters as input to calculate the optimum parameters.

In my seventh semester I was selected to be a Teaching Assistant for the the course of fluid mechanics. My job involved suggesting minor changes to coursework, grading class tests and on and on. This stint helped me understand the challenges in academia.

As part of this I got the chance to assist the instructor of the course. In this I learnt about the challenges in the field of academia.

I believe xxx university would be a great place for me to hone my skills.

I am interested to do research in the branches HVAC, Refrigeration and Heat Transfer. After going through several works of the professors, I found Prof. James E. Braun’s work on building energy system optimisation exciting. The authors discuss the implementation of distributed optimisation algorithms in multi-agent framework for controllers. I also found the work by Prof. Suresh Garimella on thermocline thermal energy storage to be interesting. Here the effective storage and delivery of heat by thermocline tanks is explained. You should not be telling them what they are doing. You should instead be telling what parts of their work interest you.

The professors I mentioned above and many others have been doing research in the direction of optimisation of energy consumption, these research topics strongly align with my background and interests.

Moreover as I have mentioned above most of the topics I am passionate about and worked on, align in the same direction. Hence I think that I am a suitable candidate for the program. Xxx university would be the perfect place for me to learn more on these topics while doing my research