STATEMENT OF PURPOSE

I have always been curious about the complex and intricate mechanisms involved while making any product. In order to satisfy this interest I chose the undergrad program in mechanical engineering. In this article I have tried to elaborate my aspiration to continue discovering concepts at an advanced level.

During my voyage through the course curriculum of mechanical engineering I developed interest in applications of numerical analysis in heat transfer and fluid flow. Consequently I opted to work on a project that used numerical modelling and simulations. It involved determination of optimum residence time of slabs in a reheat furnace. While working on this I developed aptitude for using literature review and software tools to overcome the challenges. This came in handy when I worked on an industry based research with one of my professors. An organisation had approached him for CFD analysis of screw turbines. I used FLUENT to analyse the performance of turbines based on various flow parameters. I went on to present these results at a national conference. This experience inspired me to pursue a career in research. I believe that masters at Georgia Tech would lead me towards my goal.

In order to increase my expertise at research in an actual industrial environment I interned at Aditya Birla Group Corporate Business Excellence in the last semester. The aim of this unit is to guide the manufacturing plants of the conglomerate. Here I was assigned the task to develop a model to determine optimum parameters in a cement manufacturing mill. To achieve this, I used neural networks and global optimisation in MATLAB. Finally I designed a desktop application that calculated the optimum parameters. Here I learned to apply the theoretical concepts into practice. I wish to cultivate the necessary skills at Georgia Tech, to make significant contribution to the industrial research.

In my seventh semester I was selected to be a ‘Teaching Assistant’ for the course ‘fluid mechanics’. My responsibility was to suggest minor changes to coursework, grading class tests, preparing question banks etc. This period helped me understand the challenges in academia. Furthermore I developed an interest to pursue a career in this field. In this regard, I believe Georgia Tech would be the perfect place for me to hone my skills.

I want to explore the themes of heat transfer and fluid mechanics in depth at Georgia Tech. Therefore I went through several of the engaging works by the professors. I found Prof. Zhuomin Zhang’s work on thermophotovoltaic emitters to be exciting. The enhancement of emittance intrigued me the most. I wish to be a part of his research group.

To sum up, I am passionate about the topics discussed above. My ultimate goal is to pursue research in these areas either in academic or via industrial environment. I believe that I can acquire the necessary skills by pursuing masters at Georgia Institute of Technology.