

Dear,

First of all, I am happy for the chance to apply for this scholarship, and I would like to express my appreciation for providing my research interest which leads you to join IIT KHARAGPUR through ICCR scholarship. I am Geleta Kinkino Meyu, currently working as Lecturer at higher public institution (Ambo University), Ethiopia. As you observed from my curriculum vitae, I have master degrees namely: Master Degree in Applied Mathematics (optimization stream) from Addis Ababa University, Ethiopia and has bachelor science degree in applied mathematics from Ambo university, Ethiopia.

Next, I am stating my interest to apply for PhD in the area of applied mathematics (operational research, Numerical optimization and other related field). I have chosen applied mathematics to study as my preference field of study since my interest in this field has been developed starting from lower grades up to the completion of my preparatory school. Having this interest, I am initiated to read different books, published papers, reviewed papers and other related sources in relation with the field of mathematics that enables me to become a lecturer in applied mathematics. Now a day, I have been working as a lecturer and researcher in higher institution, Ambo University, Ethiopia. Hence, I have been teaching/delivering different courses for undergraduate students in line with conducting different studies and providing a community service to the nearby the communities.

Therefore, I have got a lot of experience from all steps of my studies which desired me to do different researches and to begin further studies. I am always eager to improve my skill and knowledge through hardworking. As a result, I have developed my confidence in conducting different researches and to look forward for further studies. As a lecturer and researcher, I have gained different experiences& knowledge which help me to develop my strength in academic world for further growth. It has given me the confidence to conduct further study and also initiate me to do different researches. This career with open prospects has given me constant incentive to improve myself and to gain more knowledge.

With the background knowledge I have in Mathematics, Statistics and Computer, I strongly feel that PhD study in the area of optimization (operational research, Numerical optimization) and other related applied mathematics will be very relevant to my future work and to involve myself in this research area to solve the problem throughout the World and my home country Ethiopia.

My long keen interest to involve in scientific research areas in optimization related fields as optimization play major role in operational research, finance, statics and others applied science. Optimization is an important tool in making decisions and in analyzing physical systems. In mathematical terms, an optimization problem is the problem of finding the best solution from among the set of all feasible solutions. The first step in the optimization process is constructing an appropriate model; modeling is the process of identifying and expressing in mathematical terms the objective, the variables, and the constraints of the problem. An objective is a quantitative measure of the performance of the system that we want to minimize or maximize. In manufacturing, we may want to maximize the profits or minimize the cost of production, whereas in fitting experimental data to a model, we may want to minimize the total deviation of the observed data from the predicted data. The variables or the unknowns are the components of the system for which we want to find values. In manufacturing, the variables may be the amount of each resource consumed or the time spent on each activity, whereas in data fitting, the variables would be the parameters of the model. The constraints are the functions that describe the relationships among the variables and that define the allowable values for the variables. In manufacturing, the amount of a resource consumed cannot exceed the available amount. Hence, the topic is attractive and wants to study further over it.

I have done the paper over quasi- Newton line search algorithm for solving unconstrained non-linear least square

optimization problem, among such methods I focused on BFGS and DFP update with back tracking line search methods. Both BFGS and DFP is effective to find minimizer of Non-linear least square problem as may non-linear least square problem is ill-conditioned while we find its Minimum. Not only these, as I have been studying and done a paper over analytical with Numerical solution of heat equation in one dimension through the rod of length 8 units and the solution agrees up two decimal digits, I am interested over this numerically related area as well.

Therefore, I need to study optimization related field like operational research, numerical optimization and other related fields of applied mathematics for my future works. Thus, I am very happy if I have got an opportunity to continue my further study for PhD in this particular area for further work as I have background knowledge and enough experiences. Through my future time I will do all what expected from me with time given to me, and as my prophet compasses, advises, proposes, and consults me as to be accomplish my duties.

I am looking for quality education in applied mathematics area with an appropriate research line and any additives. Due to this, I have found that your IIT KHARAGPUR PhD training program will make my vision real to become internationally competent in order to enable my country one step ahead in academic world. In developing country like Ethiopia, one of the most problems is lack of more knowledgeable person in science and technology like operational research to run with current science and technology for the next innovation work. To tackle this problem, conducting research in this area is very crucial for me as well as for my country, the world; in general since this field of study has infinite applications for the future development in multi- directions.

I strongly believe that this study will increase my experience and knowledge for further investigation in applied mathematics as we solve real world problem, way of initiating and coordinating different researchers and working together, and it also will develop my specific knowledge related to my field of study. It also will give me a great positive disposition to make strong connection with researchers in India for my future research. I belief that the new knowledge and experience I will get from this study will contribute a lot for my country to her future innovative strategies so as to increase the development and wellbeing of our society.

In conclusion, I am determined to make the most out of the scholarship benefit, and I hope that your admission committees will consider me during their selection to study at your institutions. I am dynamic, disciplined, and purpose driven who will strive for my success and excel. I have a good command of communication in English. I am also sociable, descent and interactive that helps me to learn things from others. I can assure you that I will be one of the competent learners among others and a worthy member of the team if I get an opportunity to be part of your student at your institutions. My ambition is that after completing my PhD study at your IIT KHARAGPUR institute, I will root myself on the Ethiopian soil and return to my regular job.

Considering all my relevant documents and experiences, I hope that you will consider me to be part of your partner, and I am looking for your positive response. For further information, you can contact me via my email address given below.

Sincerely yours,

Geleta Kinkino Meyu

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