MS Industrial Engineering  
Fall 2010

STATEMENT OF PURPOSE

Hi! My name is and I am applying for an MS program at your prestigious University. This is my Statement of Purpose.

**Early Years:**

Since my boyhood days, I have been extremely interested in Mathematics and the Physical sciences, which is quite evident from the Science whiz kid award and the certificates of merit for excellence in the physical science subject during my school days. As I grew up, I developed a liking for electronics and took great pleasure in building simple electronic circuits.

This passion for electronics drove me to choose Electrical and Electronics Engineering as my major field of Under-Graduate study, where I have been a consistent performer throughout. With well-equipped modern labs and experienced faculty members, I could thus devote four years of intensive academic focus to this discipline which has helped me strengthen my basics and laid a strong foundation. The engineering curriculum gave me a strong grasp of various technical principles. But, now I would like to combine this vast application potential with the Industrial management studies, which I feel is essential in today’s life. I am keen in continuing my academic pursuit in this direction.

**Project and Paper presentations:**

As part of the college Curriculum, I have had the opportunity of presenting a couple of Research papers, of which, the first one titled Location Tracking – which was an over view of GPS coupled with the concepts from Electronics. The second titled Integrated circuit dealt with its Fabrication techniques with innovative ideas to improve the same. I worked on a mini project during my fifth semester. The project termed Automatic Room Power Control, used semiconductor devices including the Light Dependant Resistors in the same. A small working model presentation of the project won the second place out of 65 participating entries. And, as a finale a small group of four members lead by me explored the Controller area network (CAN) to be implemented in an Industry with an illustrative visual basic presentation and a miniature model of an Industry. Apart from the technical aspects of my projects, I also had the opportunity to do a risk assessment of the project, show my leadership skills by leading few projects while also playing an excellent team-player.

**Extra-curricular activities:**

Apart from academics, I also have a keen interest in Music and Yoga. I am a performing percussionist playing the Mrudangam (an Indian drum instrument) and the Drums. I believe that music has helped me channelize my creativity and has helped me become a much more rounded personality. Having performed over 50 concerts all over India and
abroad with renowned musicians in various genres of music, I take pride in the fact that I have been able to manage my time judiciously and resourcefully. And, Yoga has been an integral part of my life, associating myself with the ISHA yoga foundation, set in the lush rainforest at the base of the Velliangiri Mountains in southern India, and at the Isha institute of Inner Sciences on the spectacular Cumberland Plateau in middle Tennessee, USA.

Why IE?

I thirst for such a program that would help me to acquire a higher level of knowledge, leadership skills and problem solving ability to tackle the most diverse and intricate problems in an Industry. I realize that a Masters degree in Industrial Engineering will enrich me by transforming me into a complete professional and providing me with the raw materials necessary to get a winning edge over others. In pursuit of these goals and to enhance the exposure I got out of my work experience, I am resigning my job (currently employed as an Operation Research Analyst at IBM). I learned from the University website that the IE department is noted for its “hands-on” approach to graduate education, complemented with a strong theoretical program. I look forward to working with your distinguished faculty and interacting with students from diverse cultures for a global outlook.

Goals:

I wish to build on my foundation by undertaking higher studies in my field of preference. I envisage a career of pioneering research work and continuous contribution to my field and this requires a greater knowledge base which can be gained only through a good graduate education.

Conclusion:

It is important that I do my graduate study in a stimulating and challenging academic environment such as that of your graduate school. The cross-cultural exposure, the pantheon of globally reputed faculty members and the truly astounding infrastructure would contribute greatly in my quest for research.

I wish to be considered admission to the M.S. program at your university and look forward to a very productive and pleasant learning experience at your university.
"Every one's world is as large as his thoughts". I have regarded this opinion as a dominant rule in my life to achieve the desired goals. What we expect will happen sooner or later, so we should always think about sublime targets. Since I was born and grew up in an educated family, I found myself extremely interested in conducting scientific studies and research projects. In this respect, from the early years of education, I focused my attention on achieving such scientific goals thoroughly and, throughout my education, I worked very hard so that I became one of the most effective and proficient individuals in my major. Most of my teachers and classmates believe that, during my academic education, I have done scientific research as much as a Ph.D. candidate does. However, I personally believe that I have achieved just a small part of the desired outcomes. Furthermore, in comparison with my classmates, I have always had a deeper perception regarding opportunities and challenges about the field of transportation. It might be because of my family atmosphere, specifically my father who has a broad professional background in this field.

Choosing mathematics as my major in high school, I decided to prepare myself to study Civil Engineering in future. By effort and perseverance, I could change my potentials to actual ability. As a result, I got the government grant in fall 2000. This capability also helped me achieve excellent scores in mathematics courses during my undergraduate studies.

The second step towards my goal was to choose Civil Engineering as my major in Bachelor of Science. During this period I had the opportunity to enrich my knowledge technically and theoretically. Being accepted in this major, I got the chance to become more familiar with different fields of Civil Engineering. At this time, I put my research activities in the highest priority. As a result, I became the assistant editor of the Emarat Magazine - a student magazine on Architecture, Urban Design and Civil Engineering that has been honored as the second national scientific-specialized magazine in the fifth national festival of the university publications in the country- which I consider one of the most successful examples of teamwork I experienced during my undergraduate years. I also published eleven papers in magazines and national and international conferences, and I won two awards in two national conferences. In addition, I was member and head of some research institutions such as Green Earth Research Institute, Wooden Hamlet of Neyshabour Research Team, Young Researchers Club and Radandishan Research Institute. Moreover, Dr. Tabatabaei who received his PhD degree from Sydney University chose me as his research assistant in the “Collecting Rain Water from Roof Surface” project.

Pursuing my educational goals, I volunteered as a teacher assistant for many undergraduate courses to satisfy my desire to pass my knowledge down. One of my greatest honors is that the students always believed that I was a helpful and distinctive teacher which inspired me to continue my teaching experiences in the next semesters. I always tried to motivate students in my classes and solve their problems even out of duty time.

Since most of the classmates knew me as a person with significant management and educational abilities, I became the Chair of the Civil Scientific Union of Islamic Azad University of Mashhad (IAUM) in an election among Union members in third semester. I also was executive member of organizing committee in some conferences and competitions such as ACC (Azad Concrete Competition), the 2nd Local Concrete Symposium, 1st Engineering and Earthquake Meeting and 1st Urban Robotic Contest.

Although I had many research activities in the field of structure, I got along very well with transportation courses such as "Highway Geometric Design" and "Highway Pavement Design" instructed by Mohammad Rezaian who is graduated from University of California, San Diego. I achieved excellent scores in these two courses which were prerequisite for "Principles of Traffic Engineering" in which I gained the top score. All of these motivated me to pursue my Master of Science degree in Transportation Engineering.

In fall 2007, I acquired the good rank of 144th (top 1% of the country) in National Graduate Entrance Exam in Civil Engineering in which more than 18000 civil engineering graduate students took part. This Exam is very tough and competitive university entrance contest in my country, and I received the grant of Ministry of Science, Research and Technology. I was admitted in the Civil Engineering department of Sharif University of Technology (SUT), the world-renowned university in my country for its brilliant students, among whom many are admitted every year into the world’s top graduate programs in science and engineering.
The graduate curriculum in Transportation Engineering at SUT – offers the best graduate program in Transportation Engineering in Iran - introduced a wide range of subjects to me, in the field. Various courses like Advance Traffic Engineering, Operation Research, Transportation Planning, Transportation System Analysis, Transportation Demand Analysis, have provided me with a strong fundamental in the theoretical and practical concepts of Transportation Engineering. I participated in a lot of theoretical and practical projects with supervision of my professors and I got useful and invaluable experiences. I found myself in a very competitive environment from the beginning of the first Semester. My motivation, talent and hard work helped me to give me my first success in an Advanced Traffic Engineering course (Top 10%) that being taught by Dr. Habibollah Nasiri who received his PhD degree from Texas A&M University. In the third semester, I passed two courses called "Public Transportation" with Prof. Manouchehr Vaziri (PhD from University of California, Davis) and "Airport Designing" being taught by Prof. Yousef Shafahi (PhD from University of Maryland) and I got excellent scores. I also published a paper under the title of "The Study of Bus Signal Priority Strategy Based on GPS Communications (Tehran BRT)" at the 9th Conference on Traffic & Transportation Engineering (Tehran, Iran), and submitted "Survey on Shock Wave Impact on the Highway Performance" that was accepted for a full submission at the 12th World Conference on Transport Research (Portugal), and "Investigating the On and Off Ramp Performance on Highways Using HCM Analytical Model and Traffic Simulation Model" at the 9th International Congress on Advances in Civil Engineering (Turkey) that was accepted for a full submission.

My acquaintance with air transportation originates from my father's job. He has experienced the management of three airports all over the country. It is all too common that an airline is faced with the necessity of rescheduling due to some unexpected events such as an aircraft breakdown or unsuitable weather condition. Rescheduling flight in such conditions is inevitable. Many of our airlines have difficulty to deal with these problems. By passing the airport designing course and getting important information in this filed I decided to choose my M.Sc. research thesis under the title of "Flight Rescheduling after Perturbation with Crew Constraints" after studying lots of previous literatures in this particular field. I did this research under supervision of Prof. Shafahi, who received his Ph.D. degree from Maryland (college park). Also I published a paper under the title of "The Study of the Demand for the Air Taxi Travel in Iran Airlines" at the 9th Conference on Traffic & Transportation Engineering (Tehran, Iran). In addition, I submitted two papers that were accepted for a full submission at the 12th World Conference on Transport Research (Portugal) and at the 5th National Conference of Civil Engineering (Tehran, Iran) in relation with my thesis.

When I worked as a part time expert at a Transportation Consulting Company (Pardaraz Co), I have contributed in some projects in relation with safety; therefore, I became aware of this reality that in my country there is not enough consideration about this issue since the amount of accidents in my country is tremendous. As a result, I decided to continue my research in this field. Consequently, I published a paper under the title of "The Relationship between Type A Personality and Car Accident" at 2nd International Traffic Accident Conference (Tehran, Iran) and I submitted “Personal Characteristics: An Influential Factor in Causing Road Accidents” at the 9th International Congress on Advances in Civil Engineering (Turkey) that was accepted for a full submission. Furthermore, I am working as research project executive on a project under the title of "An Investigation on Stressful Kind of Life on Drivers (Type A) and Consequences of This Type of Behavior on Drivers on Khorasan Razavi Roads and Applied Solutions for Reduction of Traffic Accident" which is supported by IAUM. In addition, I contributed on some projects in relation with Transportation safety such as shahcheragh, Ehean, Molasadra, Besat, etc.

To clearly express my goals, I am seeking a high-level research program in Transportation Engineering to pursue my post-graduate studies (I mean my PhD). I think in this period, because of the youth gift, I have the opportunity to perform deep investigations on the topics of my interests. However, I am sure that starting my studies abroad will open up a whole new horizon of opportunities in related fields, which then I will be ready to take on those challenges too. For career aspirations, I hope to become a faculty member at a prestigious university or a professional researcher at a corporation. High quality of study, strong research facilities and honorable faculty members and also its inspiring and stimulating environment for studying and doing research are the main reasons of pursuing higher education in Montana State University. There are some noticeable aspects that have given rise to valuable outcomes and I look forward to making a contribution to these achievements. Moreover, I hope to work under supervision of Dr. Laura M. Stanley since fortunately her fields of research and interests match exactly to those of mine.
Statement of Purpose

In my student life and consultancy as an entrepreneur, I found myself very much interested to do profound researches in the field of Supply Chain and Logistics Engineering. Trenchant nature of my characteristics was flourishing by Industrial and Production Engineering (IPE) program of Bangladesh University of Engineering and Technology (BUET), leading and very prestigious technical university in Bangladesh. Keeping consistency as first or second in the class position helped me to complete undergraduate program with a CGPA 3.87.

Strong participation in co-curricular activities, commercial projects and engineering researches emboldened me to start first ever industrial engineering consulting firm (ECLECTIC) in Bangladesh. To be more result oriented and dynamic to my clients I need to learn ways of finding international best practices and optimum solutions from the Elite School like Department of Mechanical and Industrial Engineering of Montana State University.

Crafting new ideas by refining or enhancing systems and approaches to hit the target and bring the result always makes me alacritous to work business oriented study, research and projects. In October, 2008 I developed Aggregate Production Planning (APP) Model for HATIL Complex Ltd, leading furniture manufacturers in Bangladesh, with effective forecasting, inventory management, product life cycle analysis by optimizing constraints of productivity, operational expenses and lead time. Now HATIL is successfully using this model. After that I have cherished desire to work with more practical problem with modern updated solver. Beside this I have designed and successfully implemented improved facility layout, material handling, warehouse system and management, delivery and logistic mechanism etc for different organizations in Bangladesh.

Being the Managing Director of ECLECTIC, I lead 11 full time engineers to prolong expediency of ECLECTIC in versatile field of production and service oriented Industries like Unilever Bangladesh Ltd, Rahimafroz Batteries Ltd, EnergyPack Ltd, TK Group of Industries, humanitarian development organizations like Swisscontact-Katalyst, Local Enterprise Investment Center of IDLC Finance Ltd, Embassy of Denmark etc.

Inevitable enigma of dynamism because of changing market demand, quality of resources and economic factors entangled business organizations to exult by ensuring faster delivery, perfect quality, design variety and low prices. This conquest is frequently wobbled by high material and labor costs, high operational expenses, high purchase costs for plant and equipments and the risk of unsold or insufficient inventory etc. Predictably most of the elements of contest are function of Supply Chain and Logistics Engineering which over operational capacity determines a factory’s chances for success.

Moreover, I can distinctly draw a line over the globe to mark major producing industries in Asia pacific and Africa and consumers in America, Europe and Australia. This nexus stands on interaction of information, expertise and materials which we call supply chain. Bangladesh is a producing/ exporting country whose range and volume of export items is increasing rapidly. The export oriented industries are facing hardships to compete with manufacturers in China, Vietnam, Sri Lanka and other Asian countries. To beat the competition and widen area of services for effective partnership with the potential clients of
ECLECTIC, my competitive edge needs to sharpen by specialized knowledge in Supply Chain and Logistics Engineering.

I have proved my potentials in numerous competitive engineering research and projects and self-assured to work with top class, talented and experienced faculty of Department of Mechanical and Industrial Engineering of Montana State University. I feel more passionate to do researches in your school after knowing world number 1 facility, courses and faculties to guide me towards the way of excellence to serve more productive projects to my clients.