

Since childhood I was always interested in how things around me worked; I would always get my hands on the latest gadgets and try it's latest features. You could find me disassembling the speakers of the music system at home or squeezing back behind the television set to see what's inside. Finding answers has always been somewhat like brain 'food'. I have always seen a new day as the chance to learn more, learning is almost like breathing, school has always been a fun place to be.

Studying Physics at the university level is igniting. The subject's beauty is indeterminate as it seeks to reason almost everything in nature; it's a way to decode the universe. It is startling to see that the myriad of phenomenon taking place around us is so intricately related; as Stephen Hawking proposes of the universe is part of a grand design with structuring and organisation at every level. Human intelligence has been finding a way to discover a pattern among processes to formulate the laws of physics.

To me, Physics is a method of discovery; to design, invent, innovate and find logic amidst chaos. The methods of analysis and the language of mathematics give a chance to unravel the hidden secrets of the universe which are beyond observations. To me, fields such as Quantum Mechanics and Special Relativity seem counter-intuitive yet spark a lot of imagination and curiosity. I find the very idea of Quantum Mechanics being applied to computation for parallel processing a mark of the advancements of the science of today. Science always surprises us with novelty.

Being a physics student has not only taught me how to be mentally tough but it has also given me the chance to explore and fuel my intrigue. Every time there's a complex problem in front of me, now I see it as a challenge to 'lean in' because when one tries there's always a possibility that one succeeds and is nil when one doesn't. The greater the complexity of the problem, the more interesting it becomes. These teachings are almost similar to the life lessons I learnt as a dancer; to practice rigorously is the only key to perfection.

Our ability to find answers to the mysteries of the universe is the highlight of dexterity of human intelligence. With new technologies and methods of Machine Learning and Artificial Intelligence coming into mainstream that are augmenting scientific research I want to understand the realm where computers give us far more accurate answers than the traditional methods. I have been a keen follower of Ray Kurzweil who prophesizes of a technological singularity where machines will transcend human intelligence and we'll be living in a hybrid civilization; therefore I want to dwell upon how the computers can provide us the solutions we haven't been able to find, to help us see the reasons behind the characteristics of physical processes.

When I first joined coding class I realised that computer programming is one of the most creative pursuits, just like playing the piano it gives an aesthetic ability to simulate any process being described mathematically and get results. Machines can form a universe among themselves, once we program the machines to perform a particular task and make it capable of learning like humans, we can create a world which works on our 'will'. This excites me for the future where I would like to design intelligent software which solves problems, somewhat like the enigma machine. After watching the movie 'The

Imitation game' Alan Turing seems like a superhero. It's his tools and knowledge which made him able to device a machine which performs tasks as he wants it to.

Physics is a series of ensuing events; first you research, add to your knowledge and then you use that knowledge to design and innovate. Just like while dancing, I see a series of movements which my instructor performs, then there's a framework or a routine which I need to master and only after that can I use those movements(or similar ones) to form my own.

This internship experience will not only provide me with the opportunity to gain insight to advanced systems but also understand physical significance of what is studied inside the classroom, I want to get to a point where I master the art of execution. Going to a different country and learning gaining a wider perspective towards things would be another step forward to train myself to analyse a process in it's various dimensions which is the paramount prowess of a science student. I want to get acquainted with the ideas of tomorrow, ones that can change the world and feel that as the youth of today I will have the onus to share my experiences and enthral a lot of people towards the spheres science opens up. I am the President of the Physics Society has honed my communication, managerial and public speaking skills. After organising events for the society, interacting with a large number of peers and being in direct contact with the professors I have gained the ability to effectively communicate my ideas.

I want to work on application of machine learning techniques to Physics research as it almost seems magical that we can interpret data to make predictions and test the validity of our theories. It's an opportunity to not only add to the knowledge of the world but to satiate the quest that drives progress. Studying and practicing science is a tool to make advances in intelligence much faster than that made by the evolutionary processes. All in all this experience will be an intellectually fulfilling program and step forward to pursue my interests.