# *Shreyas Moudgalya*

**Eng. Practicum Essay Questions:**

1. What developed your interest in computer science? How will the EP program support your future goals?

My interest in Computer Science can be traced back to the 8th grade. My computer science teacher invoked the inquisitiveness in my mind when she was teaching the simple bubble sort algorithm. I felt a need to improve this sort technique in my own way. I came up with my own “convection sort” algorithm. I self-taught the Algorithmic Analysis and the Big O, and wrote a paper which was finally published in the Foundation for Student Science and Technology, Canada.

I also used to be a freelancer. I designed smooth web pages and would find people who would needed a platform to showcase their ideas and make a website for them. It didn’t take a long time for me to realize that this was a creative process. Each design was client specific. They knew what they needed but never knew how it would look visually. That’s where I came in. Each project that I undertook felt different. Each webpage was a slow idealistic process. Unlike other freelancers, who use a sample template and just added images, I would carefully take my time to make sure each part was customized and simplistic in design. Not only was I supporting myself financially, but also learnt the skills of designing effectively. I was helping my clients, reach a higher platform and fueling their passion and success with my creativity.

The passion remains but the perception has changed. Everything around us is now digitalized. I’m doing Dual Degree in both Electrical and Computer Engineering as I like both Hardware and Software. After learning a lot about hardware and its usage in shaping the industry at National Instruments during my previous Internship, I wish to complete an internship in the software industry this year. I’ve always seen Google as an entity with a simple goal that wishes to change the way the world works and make this world a better place. I believe in a similar goal. Google has developed various products that has made information- which was hard to find -accessible to everyone. The EP program would help me discover what it feels like to be a real engineer at work including the pains and the gains in the process of creation. I also hope to have an opportunity to explore and enhance my technical skill set which is what I’m mainly seeking.

2. Tell us about a time you’ve used your strongest coding language. Please go into detail about your experience using this technical language (for example project, competition, website).

I feel that Java is my strongest coding language. I have used java for various applications such a building an entire Chicago transit model to an Automaker management tool using the object orientation model. I also used APIs from other sources such as (http://unfoldingmaps.org/) to create various geo visualizations and interactive menus from the Java Processing Library GUI. However, I feel that the project that I’m currently working on is my personal favorite. I am trying to build a music artist search algorithm that in turn is linked to other artists using Pythonic Implementations. This is more like a recommendation algorithm. Inspired from my current ‘Data Structures’ class, I am trying to build this application from scratch without using any other external open source codes. Though I may not be using advanced techniques to achieve the result, I’m thinking of building this in two parts. The first part would entail me trying to get a database of a significant number of artists in a file. I would then use the YouTube API to match the artist’s song name with the database. After matching, I would add the artist and the featuring artist into a dictionary while also cross referencing them. I also need to have a list of songs of the featuring related artist. The second part is having a weighted average of the number of the searches for each of the key value pairs so that it behaves like a recommendation algorithm for new songs.

3. The EP program is committed to increasing diversity within the technology industry. Why do you feel having a diverse workforce is important and what can Google do to further this goal in technology?

Diversity is an important part of working in a group. Each member with his or her own skills and qualities can help the group to progress. It was a complete change in my group environment when I came to the States to study at Illinois Institute of Technology. The Diversity at Illinois Tech is unparalleled to any other. Being roughly 53% International, Illinois Tech has given me a global exposure in a period of months. I feel that the culture would be the same in the Industry. Learning to use chopsticks to eat noodles and figuring out how the bumpers and touch sensors work in our ECE lab is not too different with my Chinese teammate. Playing a game of FIFA 2015 on a PS3 or talking about how to write a Mario game in JavaScript is not too different with my fellow American friend (Given the fact that I've never played FIFA or used a PS3 before until I came here to IIT).

Our cultural differences help us to look at things in an interesting and new way that enables better logical conversations which can lead to a possible solution. I think that Google has been successful in bringing in lots of diverse people to work together. Hiring more interns and engineers from a university that has a lot of diversity such as Illinois Tech would help further this goal in technology.