

Name : Abhideep Dasgupta  
Position : Junior Design Engineer (Intern)  
Company : Geometric Americas' Inc.  
Location : Peoria, IL  
Dates/Duration : 23 May 2016 – 12 Aug 2016 (12 Weeks)

---

During the summer of 2016, I spent three months in the Peoria, Illinois office of Geometric Americas Inc, gaining an in-depth knowledge of the various aspects of product design and analysis. Geometric provides engineering solutions, services and technologies to clients all over the world. It has a diverse portfolio including Global Engineering services, Product Lifecycle Management (PLM) solutions, Embedded System solutions and Digital Technology solutions. I had very little experience with Geometric's line of work before stepping into the office on the first day, but I came with the determination to learn and prove myself.

In the summer of 2014, I completed an advanced course in AutoCAD 2D and 3D (Computer Aided Design software) with a specialization in Mechanical and Electrical drawing. This had taught me a lot about the basics of Engineering design principles. I started my internship in the Vehicle and Design Division. I was assigned a project that involved designing individual parts for a Cold Planar, a type of paving machine, for a client. The software being used, Creo, was very similar to AutoCAD and therefore I picked up speed quickly. Over the next four weeks, I worked with a team to design a steering rod and cylinder that allowed the front wheel to turn a specific angle on either side of the center. We finally submitted our designs to the client, and then started with the administrative work. At this stage, my Manager and mentor suggested that I move to a different team to get a wider understanding of what the company does and a better sense of the industry in general.

Four weeks into my internship, I moved to the Computer Aided Engineering (CAE) department. Here, the team mainly works on meshing the final design model and performing Finite Element Analysis (FEA) . It took me a couple of days to familiarize myself with the software used, namely HyperMesh (of the HyperWorks suite) and Abaqus, before I was able to contribute to the team with all aspects of the analysis. Finite Element consists of many critical steps, most broadly pre-processing, analysis, and post-processing. I spent some time shadowing the team to understand how they received and acted on various projects simultaneously, and soon I was asked to work on one of the projects. I was under supervision as I completed every step of the process, and finally I submitted my preprocessed model of a large scale engine for Finite Element Analysis by the pre-set deadline. Once the analysis was complete, I also finished post-processing it and combining the results of FEA, Computational Fluid Dynamics (CFD) and Frequency Response Analysis (FRA) into the post-processed report for the client.

All in all, the 12 weeks I spent at Geometric in Peoria was extremely enriching and taught me various skills that I would not have the opportunity to pick up from a classroom environment. I explored various subject areas and got a far better understanding of my interests and skill areas. I am very thankful to the entire workforce at Geometric for this wonderful and unforgettable experience.