Statement of purpose

My goals

I am applying to the PhD program in Computer Science at Brown University. After considering my aptitude and the type of work that I enjoy most, I am convinced that I want to take up a career in research in Computer Science. A PhD is just one step towards realising this goal.

My preparation for the same

My formal introduction to Computer Science began at IIT-Bombay. Under its excellent faculty, I got exposed to the entire spectrum of Computer Science. In an environment that is intensely competitive, and where research goes hand-in-hand with learning, I also got a lot of drill in both theoretical research work and implementation, thus laying a sound foundation for graduate study.

My academic and co-curriculur record has been consistently good. Throughout school as well as now, I have been at or near the top of my class. I have listed some of my achievements, on the attached resumé. What I would like to stress most however is the fact that I have been *consistent* in *all* academic or co-curriculur (and even extracurriculur) tasks that I have undertaken.

My primary interests

I have always loved problems which involve plenty of visualisation. At IIT, this resulted in an inclination towards **Computer Graphics** and **Computational Geometry**, and also Algorithms. *These are the subjects that I want to pursue in my graduate study.*

I chose the elective *Computer Graphics* and a graduate level course *Algorithms and Complexity* this semester, in line with these interests. My B.Tech. Project (home paper), under **Dr.Sharat Chandran**, is on **Visible Surface Determination** (hidden surface removal), a very popular topic in Computational Geometry.

Why Brown University ?

It would be a cliché to say that all fields in Computer Science are highly interlinked. I have experienced this myself, since frequently, while working on a problem in one field, I have (through abstraction/ reduction/ analogy) landed up looking at another problem, that one would normally put under a different field altogether.

Hence, two criteria that I considered while selecting a university for my Ph.D. were

1. the university must be very strong in **Computational Geometry** and/or **Computer Graphics** (my primary interests), and

2. it must be fairly good, if not exceptional, in other fields of Computer Science too (especially, algorithms and combinatorics).

Brown University more than satisfies these criteria. My B.Tech. Project guide, Dr.Sharat Chandran also strongly recommended it. An added attraction is its participation in the Science and Technology Center for Computer Graphics and Scientific Visualisation.

There is one more (*and the most compelling*) reason. In my B.Tech. Project, my guide and I are concentrating on developing better methods for the moving/ multiple viewpoint case of hidden surface removal. The preliminary ideas that have emerged out of this effort use a result on *Dynamic planar point location* by **Prof.Roberto Tamassia**. The *line sweep* technique is the other major component in these ideas, and it was from **Prof.Preparata**'s book on Computational Geometry, that I first learnt it. *The fact that both are from Brown University convinced me that Brown University is the natural choice in realising my graduate goals.* Subsequently I corresponded with Prof.Tamassia, and his encouraging reply reinforced my decision to apply to Brown.

It would be a pleasure to continue my current research focus at Brown under their supervision. At the same time, I am sure that many other problems which the Brown CS department is currently focussing on, would be equally interesting to work on.

What I plan to do at Brown

I plan to carry on advanced study of both Computer Graphics and Computational Geometry, as well as related fields (e.g. algorithms), not only through coursework but also by *participating in one of the several ongoing projects*. This will also give me the opportunity to contribute my bit to the understanding of the fields which interest me so much.

I am keen that the output of my PhD (and in fact, any PhD), be well worth the time and effort spent on it. For the reasons mentioned above, I am sure that Brown University will provide me the right environment for this.

Financial Aid

I would be fully dependent on aid to finance my graduate studies. If I am granted an assistantship, then given my long term goals, a research assistantship would be an ideal experience for me. I also have some experience as a teaching assistant. Not only have I enjoyed it, but the students have also appreciated it. This makes me confident that I will be a good teacher also.

In conclusion...

I am aware that Brown University expects very high standards from its students. On my part, I can assure you of hard work. I believe that my enthusiasm will enable me to meet those expectations. My consistency in all previous academic and co-curriculur activities is what gives me confidence when I say this.

Eagerly looking forward to a long and mutually profitable association with the Computer Science department of Brown University,

Your's sincerely,
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