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Teaching Statement

One of the main attractions of an academic career is that it offers the opportunity to teach and mentor students. I believe that teaching and mentoring are two-way processes that benefit both the teacher and the student. While the student learns more about the subject, the teacher can also strengthen his grasp on the subject and see different perspectives on the same issue. Besides, it exposes the teacher to new, and possibly revolutionary, ideas from unbiased students.

Although I have not had a chance to teach a class formally, I believe that I have had enough related experience to teach well. As an undergraduate student in the Indian Institute of Technology, Madras, I was a teaching assistant for introductory computer science and engineering design courses. I graded assignments and projects, helped students in office hours and in the lab, assisted in preparing and grading exams and interacted with the faculty to discuss issues relating to student performance, arrangement of classes and student feedback. I also gave lectures and led discussion sessions on higher level programming languages to a group of 20 students. In my senior year, I was the head TA for the "Introduction to Computing" course, and helped in organizing the curriculum as well as coordinating the other TAs during the evaluation of assignments and exams. Besides, I was also involved in a program that organized extra classes in a variety of courses, outside the university, for students who needed it.

As a graduate student in UIUC, I gave three lectures in an Advanced Operating Systems class, covering different aspects of pervasive computing. I also helped organize a seminar on ubiquitous computing. I have presented in many weekly seminars on a variety of topics, such as AI, Mobile Computing, HCI and Data Mining. My presentation skills have been well developed by these activities as well as by many presentations at conferences and research labs.

I have also mentored a total of 12 students, at both undergraduate and graduate levels, in course projects for the Operating Systems and Advanced Operating Systems courses. Most of these projects were based on Active Spaces, the pervasive computing infrastructure developed by my research group. Besides, I have mentored two Masters students in my research group, when their Masters theses overlapped with my research interests. I helped these students come up with and formalize project and thesis ideas, reviewed their progress and helped them with various design and implementation details. One of the class projects subsequently got published as an article in the IEEE Pervasive Computing magazine.

During the course of these activities, I discovered that I enjoy teaching and mentoring. I liked the challenge of presenting difficult concepts in as interesting a manner as possible. While mentoring students, I enjoyed the task of getting students interested in the topic and motivating them to work on new ideas for their projects and theses. I believe a key element of successful teaching is challenging students continuously. In my own experience, I found that I enjoyed and learnt more from courses where I had to think outside the box while doing assignments and projects.

Given my research and teaching experience, I believe I am well qualified to teach undergraduate and graduate courses in operating systems, distributed computing and pervasive computing. I would also enjoy teaching introductory undergraduate courses in many other topics, including security, networks and artificial intelligence. In these courses, I would place an emphasis on novel projects, group work, writing concise reports and presenting these reports as well as other papers in class.

In addition, I am interested in developing two advanced graduate courses. The first course would focus on large scale systems and would combine elements from pervasive computing, autonomic computing, P2P systems and Internet systems. In this course I would focus on the challenges of building, maintaining and using large distributed systems and how techniques from a variety of fields can be brought to bear effectively on these challenges. The second course would cover different aspects of pervasive computing, including context-awareness, security, privacy, user interfaces and the evolution of pervasive computing.

In summary, I regard teaching as a vital ingredient in a successful academic career, and I look forward to interacting with both undergraduate and graduate students.