Teaching Statement
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I like teaching. To me, teaching is the conveyance of knowledge and skills from teacher to student, and vice-versa. I believe that an ideally taught college course should orient the student in the essence of the subject matter. It should enable the students to abstract away from their exercises and retain the concepts used for solution strategies.

For the teacher, teaching provides a singular opportunity to organize, clarify and present one's command over the course material. Interactions with the students often allow teachers to re-evaluate their own knowledge and gain further understanding of the subject matter. Teaching basic courses refresh and reinforce the fundamentals; teaching advanced topics and seminar courses provokes thought and challenges the creativity. Therefore, I consider good teaching to be an essential part of good research.

I believe that for computer systems courses, it is important to provide hands on experience and relate the subject matter to applications. In my experience, a substantial fraction of learning occurs away from lectures — while solving assignments and working on projects. Therefore, I feel that it is very important for the teacher to spend time on creating these assignments. Unless the teacher carefully designs the projects and assignments, it is all too easy for students to get bogged down in details of the run-time environment, and not experiment with (and learn) the intended aspects. Examinations are an essential component of courses; they gauge the student's learning as well as the teacher's effectiveness. It is imperative that the teacher delicately balance routine problems and problems requiring creativity.

Teaching is the most important function of universities and one of the most rewarding aspects of being a professor.

Previous teaching experience

I had significant experience as a teaching assistant at Maryland over five semesters, in which I was involved in all aspects of course preparation and project design, grading of homeworks and exams, holding recitation classes and regular office hours, and occasionally filling in for the professor in teaching regular lectures. I worked as a teaching assistant in two graduate level courses, Computer Networks and Advanced Database Implementation, and two undergraduate level courses, Discrete Mathematics and Introduction to Information Technology. For both the graduate-level courses, I spent significant time in implementing and fine-tuning different aspects of the course projects before it was assigned to the students. This experience better equipped me to assist students during the courses and therefore, was of great benefit to the students.

Future teaching plans

I would like to teach graduate and undergraduate courses in the theory and implementation of networking and communication systems, distributed systems and algorithms, and operating systems. Below I describe two basic and two specialized courses in the area of networking and distributed systems, all of which I will be more than happy to realize.

Basic Courses: The basic courses will primarily be aimed at providing a good breadth in the areas of networking and distributed systems and will be interesting to all students in the program. They are as follows:
• **Computer Networks and Distributed Computing Systems:** This is an senior level course that is intended to cover the principles of networking and distributed computing systems with a focus on protocols, implementations, and issues specific to the Internet. Fundamental issues, such as networking protocols, interprocess communication and synchronization, and security, as well as few selected advanced topics, such as wireless networks and mobile computing, will be studied. The majority of the course will be taught using a specified textbook, but additional papers and notes will be provided on select topics. Regular hands-on programming assignments will provide understanding of the fundamental issues.

• **Advanced Computer Networks:** This is a graduate level course that will focus on the state of the art in research (and industry) in computer networking. The course will begin with a retrospective on packet switching, study the basis for traditional Internet protocols (like IP and TCP) and then investigate a set of selected advanced topics in networking. Some example topics include service differentiation, quality of service issues in wide-area networks, new architectural changes being introduced into the current Internet (e.g. NATs and firewalls) and their applicability, how current protocols should be adapted to support mobility and ad-hoc access, virtual private networking and how to support wide-area multi-party applications. The course material will primarily consist of a set of papers and RFCs. As a course project, students will also need to selectively implement new protocols or network services that will be discussed in the course.

**Specialized Courses:** These courses will focus on specific sub-topics of networking and distributed systems in greater detail and will be exploratory in nature. These will, therefore, be of value to students who are specifically interested in these continuously evolving areas. Being closely related to my areas of research interest, I believe that these courses will allow students to examine these topics from a different angle.

• **Peer-to-Peer Systems:** This course will focus on issues and challenges that arise in peer-to-peer systems. Topics covered in this course will range from the basics of distributed algorithms to the design and evaluation of existing peer-to-peer systems. Performance evaluation through analysis as well as experimentation will be an important component of this course.

• **Mobile and Ubiquitous Computing:** This course will explore various issues that arise in networks of large number of small wireless devices (handhelds, microsensors, etc.) A course project will be a significant component of this course where students will gain hands-on experience in programming and networking these small devices. My experience in design and implementation of the Rover system (see research statement) has led me to believe that such a project can build a very insightful understanding of computer systems in general. Through this programming experience I believe that the students will better appreciate the nuances of many aspects of computer systems, including design issues in operating systems, user interfaces (specially for such devices with limited input and display capabilities) and the vagaries of wireless communication. I believe that such a course will be of immense interest to undergraduate students as well.