

Teaching Statement

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Teaching is a mutual learning process for both teachers and students. I believe that a college course should help students obtain essential knowledge of the subject and develop logical and critical thinking skills that are required for problem solving. For teachers, preparation and presentation of material re-enforces their own understanding of the underlying principles and stimulates new research ideas.

I believe that motivating students is the key to effective teaching. In addition to the clear presentation of basic content, the occasional introduction of slightly challenging topics can stimulate the intellectual curiosity of students. I also believe that understanding the relevance of a course in its broader context further motivates students. In the first year of my Ph.D. study at Maryland, I held recitation sessions for discrete mathematics as a teaching assistant, and some students seemed to find the subject material dry and minimally related to their notion of computer science. In one session, I spent some time trying to explain how discrete mathematics is used in virtually all fields of computer science as well as senior-level courses such as CMSC 417 (computer networks), CMSC 421 (artificial intelligence), and CMSC 424 (database design). This led to a tangible change in attitude as many students found discrete mathematics more interesting and relevant.

I believe that hands-on experience is essential in most computer science courses. I have been able to understand and appreciate certain algorithms better after actually implementing and using them. I believe that a few group projects of moderate size in a junior or higher level course can provide a number of interesting challenges to students: namely, the design and solution of the given problem as well as cooperation and communication among group members. The teacher should spend a sufficient amount of time on the careful design and description of the assignments and projects, so that students' efforts can efficiently translate to deeper understandings of the material. Examinations are also an essential part of courses. Along with assignments, they constitute a valuable method for the objective evaluation of students and provide feedback for both students and teachers.

Teaching is the most important function of universities and a rewarding privilege for a professor. I have enjoyed seeing students grasp various subjects through my teaching and grow in their knowledge over time, and would like to continue to grow as an effective educator as a professor.

Previous Teaching Experience

My teaching experience is varied. When I was an undergraduate student, I tutored high school students in mathematics, science, and English. In graduate school, I worked as a teaching assistant for a number of courses: *Discrete Mathematics* and senior-level *Computer Networks* at the University of Maryland, College Park, and *Introduction to Computer Science*, senior-level *Computer Algorithms*, and senior-level *Computer Networks* at Seoul National University. In these courses, my duties included holding recitation sessions and office hours, exam and assignment grading, designing projects (including full development of several projects), evaluating submitted projects, and occasional lecturing to substitute for a professor. I consistently received good evaluations from both professors and students.

Future Teaching Plans

I would like to teach undergraduate and graduate courses in computer networks and distributed systems. In a senior-level undergraduate course, I expect to teach basic principles of networking and Internet protocols. In a more advanced graduate network course, I plan to cover current research issues (e.g., service differentiation, group communication, mobile computing) and to reflect on traditional Internet protocols such as TCP and IP. I would also like to teach a specialized course on wireless and mobile networks, which will provide particular benefits to students interested in the systems area. In all these networking courses, I plan to assign group projects to promote the better understanding of overall systems design. In addition to networking courses, I also expect to teach introductory courses in computer science such as programming, discrete mathematics, and data structures. Through my graduate study and experience as a teaching assistant, I consider myself well-prepared to be an effective teacher. I am eager to share my knowledge and skills with students and become a valuable asset to a university.