

Teaching Statement

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I love teaching and interacting with students; it makes me feel good to be able to inspire and encourage intellectual growth and transformative experiences in students when I share with them my thoughts and knowledge. My desire to experience the enriching opportunities of a career in teaching, both for myself and others, is one of the main reasons I am pursuing an academic career. I enjoy every aspect of my past teaching experiences: speaking one-on-one with students as a TA, lecturing undergraduate students, and sharing my research work with my peers in invited talks or papers presented at conferences.

Teaching Philosophy

To stimulate students' study interests and to get their attention in a course, a teacher needs to exhibit genuine enthusiasm in the subject and teaching materials when lecturing in the classroom. For undergraduate courses in any computer science and engineering department, labs and projects are as indispensable components as lectures, and should be incorporated into a course whenever possible. By providing a good lab design with interesting equipment (such as PDAs, firewall boxes, and router boxes), or with realistic simulation software (such as router simulators or circuit design software), labs can be the most interesting part of a course and the major learning playground for students. As for projects, I believe using group projects is an effective way to train students to learn how to collaborate with each other and how to efficiently organize and distribute project work among all group members. Such training increases students' study interests and their understanding of the course materials, and it improves their communication and collaboration skills in the long run. A teacher should encourage and enforce collaboration and work partition by explicitly associating these skills with required tasks in the group projects.

In a research institution, graduate courses should emphasize research training rather than knowledge passing. From my own research experience in my Masters and Ph.D. studies, I think the most important skill in academic research is to find and raise the right questions. Graduate students are intelligent, yet usually lack critical problem-finding ability. Therefore, I believe that graduate-level teaching should focus on showing students what potential research topics are in the field, how other researchers identify the right research problems, and how to derive problem-solving approaches step-by-step.

Teaching Experience

During my Master's work at the University of Science and Technology of China (USTC), I organized and lectured two introductory undergraduate computer courses. Each course had approximately 40 students. Being solely responsible for these two courses, I had a great amount of freedom in designing lectures, projects, and labs. As a new teacher, I eagerly and frequently interacted with students both in the classroom and after class to determine what course materials they thought important or interesting, what material they found difficult to understand, etc.. I then used their feedback to constantly revise my teaching schedule and content. This experience helped me to understand how to teach from students' perspectives and how to explain abstract concepts clearly and vividly. From then on, I began to love teaching as I saw that many of my students showed sound knowledge and self-confidence in the material after finishing the courses.

At the University of Massachusetts, I was a Teaching Assistant for an undergraduate course, Digital System Design, that had more than 150 sophomore students. In addition to grading homework and exams with another TA, I was solely responsible for developing and grading lab projects, and for designing and maintaining the course's website. I understood the importance of projects in this engineering course, so I designed sample circuits similar to the projects and provided step-by-step explanations of the examples on the course's website. The response from students was good and I was named an Outstanding Graduate Teaching Assistant by my department.

I gained additional teaching experience when I presented two invited talks at Worcester Polytechnic Institute and AT&T Labs Research, and by making four paper presentations at professional conferences.

Future Teaching

I am particularly interested in teaching courses related to system and network security, either graduate courses on advanced security research topics, or undergraduate courses on general network security. I have a solid math background, and I am comfortable teaching courses such as performance evaluation, probability, and stochastic processes. My EE and control system background also qualifies me to teach undergraduate engineering-related courses such as digital logic, robotics, embedded systems, signals and systems, and computer architecture.