Teaching Statement

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Teaching Experience and Interests

My teaching interests largely follow from my research interests, with a focus on systems programming and dependability. At the undergraduate level I am comfortable teaching in the areas of programming, software engineering, operating systems, architecture, databases, video game programming, and networking. At the graduate level I would also be interested in offering topics or seminar courses on operating systems and virtualization, dependable systems, and storage.

As a graduate student I had the privilege of teaching the introductory course in Operating Systems (CSC369) at the University of Toronto. This gave me the opportunity to deliver conceptual content through lectures, modify and develop assignments, design fair evaluation strategies and manage teaching assistants. While the coursework was challenging, I was pleased that outcomes were in line with previous iterations of the course.

I have also served as a teaching assistant for the operating systems course multiple times, as well as Computer Organization (CSC258) and Introduction to Programming (CSC180).

I have had the privilege of holding a mentoring role for other students conducting research. Several students (graduate and undergraduate) contributed to the development and testing of Recon, my thesis project. I find that the most effective working relationships depend on cultivating a habit of open communication by sharing problems and challenges from my own work and encouraging others to do the same.

Teaching Philosophy

My primary objective in teaching is to stimulate curiosity about a subject. In order to find a problem interesting, students must first understand why the problem exists in the first place. For students to engage and think critically, ensuring that problems are well-motivated is as important as explaining the solution. Working with a consistent, concrete and relevant example scenario is one way to avoid losing the point – for example, in an operating systems course, keeping a particular application (e.g., a web browser) in mind in order to explain the necessity of different operating system services.

My secondary objective is to prepare students for challenges they might meet in the workplace, future coursework, and in research. Assignment material should reinforce and demonstrate course concepts, but it is also a confidence building exercise as students dive in to a new skill set. In this respect, excellent students need as much attention and mentorship as struggling students in order to meet their potential. I believe that assignments should contain an explicit delineation between basic and advanced material in order to engage advanced students without penalizing the majority.

I also believe in the value of group projects for developing real-world interpersonal skills. However, the assignment of group work must be done carefully. In particular, while motivated students do learn from each other, collaboration is most effective when students have similar levels of proficiency with the material. When assigning group work, affordances should be made for effective group formation, conflict resolution, and fair grading. Additionally, some students benefit from assistance in group formation.

Promoting student engagement during a class is important, providing natural breaks for students to process freshly-delivered information. One piece of student feedback that I found encouraging was that my use of the blackboard during tutorials paced the flow of information at a digestible rate, resulting in well-attended tutorials. This tightens the feedback loop of self-evaluation; rather than waiting for assignment or midterm results, weak areas can be reinforced in the next lecture.

Finally, I appreciate the value of sensitivity in interacting with students. In particular, I've listened to students share ways that casual assumptions about computer science students leave them feeling like outsiders. An effective instructor does not avoid these issues but instead recognizes when their assumptions should be called into question.