

Teaching Statement

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As a teacher and mentor, my goal is to create an inclusive environment for students to learn and grow. Effective learning relies on understanding core concepts and on acquiring appropriate skills. Furthermore, research has shown that students learn best when they apply their knowledge and skills to solve real-world problems. In my teaching, I use a variety of techniques to achieve these goals. Moreover, I seek to make the course material and assignments appealing to diverse students.

I focus on creating an inclusive environment where learning is based on understanding the core building blocks and acquiring the necessary skills. For example, in my lectures for Internet Technology (CS 352) at Rutgers University, I first used simple examples to demonstrate core concepts. Then, I presented problems and their solutions along with their drawbacks to encourage critical thinking and keep students engaged. As a result, I observed that students were motivated to analyze solutions, find drawbacks and propose new creative solutions that would address these drawbacks. Finally, students had the opportunity to apply these newly acquired skills and knowledge in the class project that required them to implement a stateful network protocol. Since applying new knowledge and skills is not always a straightforward process, I set aside additional office hours to assist students with their projects.

I believe that discussions and experimenting in a safe environment are essential to effective learning. Therefore, I encourage students to interact and ask questions. Moreover, I pair students with different capabilities to encourage students to work together. As a TA for Internet Technology (CS 352), I used my industrial experience to teach various tools (for example, tools to intercept packets) to students that they can use to acquire in-depth knowledge about networking protocols. As a TA for Compilers (CS 415), I have recited lectures using various elaborative examples to understand compiler core concepts *i.e.* scanning, parsing, optimization, code selection, etc. While employing these teaching methods, I prompt students for feedback to understand their standing in the course and, in turn, how to best tailor my teaching methods to their needs.

I believe teaching and research complement each other. In the future, while designing the course material, I would like to incorporate recent research advances and open problems in the subject to encourage students to think towards solving real-world problems. Learning to apply core ideas to real-world problems would encourage students to learn and grow. I would build an environment where students focus on learning rather than getting grades and passing the course. In my teaching, I would use grading just as a tool to understand where students are lacking the depth of subject and need attention. To improve my teaching methods and retain students with diverse backgrounds, I would take feedback to revise assignments and course materials periodically. Moreover, as a teacher and mentor, I would like to take an active role in improving the retention of female students in CS. I did not have any experience with research when I started my Ph.D. However, I was given fair opportunities to excel in my research career. In the future, I would like to do the same by providing opportunities to inexperienced students showing potential and promise.

To conclude, my career is shaped by many teachers and mentors by providing me with fair opportunities to learn and grow. In the future, I want to do the same and help students beyond classroom settings. I am excited and qualified to teach introductory CS courses especially, Networking, Programming Languages, Compilers, Database Systems, Software Engineering, Data Structures, Numerical Analysis, and Computer Security, to bring out the best in my students.