

Statement of Teaching Philosophy

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Computer science is a unique discipline in that it has a strong connection with mathematics and logic but also has enormous potential for application in all areas of life. For this reason, computer science can appeal to a variety of minds with different interests, ranging from linguistics and biology to logical reasoning and machine learning. My goal as an educator is to help students identify and pursue their interests in the area of computer science. Through my experience as a lecturer and a team lead, I gained valuable insights that will enable me to accomplish this goal.

As a lecturer in the computer science department of National University at Lahore, I taught introductory programming courses to undergraduate students. From day one, it was clear that some students were very receptive to the programming concepts while others had trouble grasping even the basic ideas. I found it difficult to maintain a pace of teaching that would suit the needs of all students. To resolve this issue, I taught extra sessions for the students who were struggling with the basic concepts. I believe that this extra effort not only helped those students complete the course successfully but also instilled in them a greater appreciation for the subject.

As a teaching assistant at MIT, I worked with graduate students in the advanced course on Natural Language Processing. In addition to designing and grading problem sets, I helped students decide on a topic for their course projects and gave them technical feedback as the projects progressed. Students showed interest in a variety of NLP applications ranging from automatic code analysis to identification of cyber bullying. I helped them scope their projects in a realistic manner such that the projects not only had enough technical content to fulfil the educational goals of the class but were also doable within the specified time period.

Outside the realm of classroom teaching, I have also guided students in a research environment. During my work as a research officer at the Center for Research in Urdu Language Processing, I led the team working on development of English to Urdu machine translation system. In many ways, my relationship with the team members was quite similar to that of an advisor with his/her graduate students. I worked to assign the right tasks to each member on the team according to their expertise and interests. Over the course of this experience, I learned that everyone can deliver if appropriately challenged. It was rewarding and fulfilling to see those students learn and grow to meet the challenges of the project.

If given the opportunity to teach a course related to my research interests, I would focus on probabilistic methods for natural language processing, with an emphasis on linguistically motivated model design. My goal would be to enable the students to understand state-of-the-art techniques in NLP and implement some of those techniques for their class projects. At the undergraduate level, I would be able to teach core introductory classes. I will also be interested in designing joint courses with other disciplines such as linguistics, biology, and cognitive sciences.