Teaching Statement

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Teaching is indeed one of the main reasons why I want to stay in academia as a faculty member. I believe teaching is not just lecturing my ideas to students, but guiding them to be better scholars through my experience. I love preparing for courses, presenting ideas that are intellectually challenging, conducting group discussions, and most importantly, motivating students to engage in class.

My formal teaching experience began during my undergraduate program when I worked as a private tutor for the Mathematics and Computer Science department. My job was to help students who had trouble following course materials by giving them one-to-one discussion sessions. From this experience, I figured out that many times, students were having trouble, not because the materials were too difficult to understand, but because they could not associate those materials with their background knowledge. For instance, one of my students, majoring in Finance and Marketing, did not realize the usefulness of calculus until I showed him average revenue was the derivative of total revenue, and marginal revenue was again the derivative of average revenue. This motivated him much more than just explaining the fundamental theorem of calculus. This experience made me realize the importance of associating course materials with knowledge that students were familiar with, and preparing courses with examples that could be understood by different disciplines.

After my masters program, I applied for a teaching position to fulfill my military duty in South Korea. This gave me the opportunity of teaching undergraduate level Computer Science courses as a full-time lecturer at the Korea Military Academy. For three years, I taught ‘Programming Languages’, ‘Computer Networks’, and ‘Object Oriented Programming’ courses; some classes were taught in English as well as Korean. During this experience, I prepared supporting examples from various media sources, gave programming assignments related to real applications (e.g., write a program for an ATM machine), and wrote exams that would credit students actively involved during class more than ones that were not by using variations of in-class exercises. I also provided several discussion sessions with different levels of exercises; students could choose to work on different levels of exercises and present their approaches to the class afterwards. These discussion sessions not only helped students understand the key ideas better, but also motivated them to challenge themselves more with harder exercises. For better communication and interaction, I adopted technologies such as a wiki or a course management system, which were not popular in Korea at that time (in 2004). As a result, I was recognized as the best teacher by the Computer Science department with an evaluation score of 4.8 (out of 5.0) during my final year at the academy.

During my postdoctoral program, I gave several guest lectures to the ‘Introduction to Natural Language Processing’ course for two years. These lectures covered the basic ideas about constituent parsing, dependency parsing, and semantic role labeling as well as surveys of the latest approaches to these tasks. This course was designed differently in a sense that all reading materials and online lectures were assigned to students before class so we could spend more time on discussions and exercises during class. This format of teaching encouraged students to be involved more in the class, compare their ideas with one another, and develop their understanding further. This also encouraged students from different disciplines working together, mostly from Computer Science and Linguistics, which brought more diversity to the class.

I am currently preparing a graduate level course, titled ‘Computational Linguistics: Syntax and Semantics’, with Prof. Andrew McCallum at the University of Massachusetts Amherst, which will be offered by the Computer Science department for Spring, 2014. The main motivation of this course is to bring both Computer Science and Linguistics students together so they can exchange research ideas with one another. All reading materials will be assigned to students before class, and discussions with exercises will be made during class. Two types of problems will be given for each assignment, focusing on linguistic and computational aspects,
respectively. Students will be encouraged to work in groups for these assignments so they can benefit from each other’s background. For the final project, I am hoping to see inter-disciplinary research by groups of students from different disciplines.

I am comfortable teaching all undergraduate level Computer Science courses, especially Programming Languages, Discrete Mathematics, Data Structures and Algorithms. I am also comfortable teaching graduate level courses on Natural Language Processing, and introductory courses on Artificial Intelligence and Machine Learning. Moreover, I am very interested in teaching courses on computational linguistics or cognitive science in general to students from multiple disciplines who can collaborate with other disciplines.