Teaching Statement

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One of my primary reasons for seeking a faculty position is to have the privilege to educate students. The number of students enrolled in computer science courses has doubled since 2005, according to statistics provided by the Office of Institutional Research. Quality education of young computer scientists is the foundation which yields a strong impact on the progress of our society, our economic growth, and making our world a better place. Teachers who are not only knowledgeable but also passionate about teaching could provide high-quality education to students. Throughout my academic career in Arizona State University (ASU) and Beihang University (BUAA), I have continuously enjoyed teaching, advising, mentoring undergraduate and graduate students, and leading students in research projects. In addition to sharing valuable knowledge to the students, I also benefit from the inquisitiveness and creativity unique to the classroom experience. Before explaining my teaching interests, I will discuss some of my invaluable teaching experience that has helped me to develop my teaching philosophy.

Teaching and Mentoring Experience. I had the opportunity to teach a variety of classes and students at all levels. I am the instructor of CSE 572: Data Mining that consists of 69 graduate students in Spring 2014 at ASU. I have involved in all facets of teaching: from giving lectures, designing assignments and exams to discussing with students, and managing a team of teaching assistants. The experience provides me the opportunity to experiment with and suitably modify different teaching methodologies. I established a close connection with my students in the classes, and some of them asked me for references in their job applications. Besides, I have been a teaching assistant and guest lecture instructor in four courses at ASU and BUAA. The experience helps me have an understanding of being a teacher, and sense the joy of educating students.

In addition, I have mentored more than ten undergraduate and junior graduate students at ASU and BUAA. The role includes instructing necessary background, discussing to motivate interesting problems, helping them formulate the research problems and propose feasible solutions. These projects have resulted in publications at prestigious conferences such as AAAI, Coling and CIKM and submissions to prestigious journals and conferences. I am also the coordinator of Data Mining and Machine Learning group at ASU that has more than 20 members and was the coordinator of Computational Intelligence Group at BUAA that has more than 30 members. To better prepare myself as a teacher, I actively attended in many professional development programs such as Preparing Future Faculty Program which is a one-year national program designed to better prepare graduate students for the multiple roles they may be asked to assume as faculty members in academic institutions.

Teaching Philosophy. Based on my teaching experience, my teaching philosophy is summarized as follows. (1) Providing Industrial Examples: Providing practical examples is a good way to motivate students. Based on my industrial experience, I always connect the algorithms to their applications in real-world products. For example, in my first Data Mining class, I used a single query in Bing to demonstrate more than ten different real-world applications of data mining techniques. I discussed many successful products along with their core techniques, such as Google PageRank algorithm is the world’s largest eigenvalue problem. (2) Conducting Project-Oriented Education: Computer science is unique in the sense that what we learn in classroom can be directly applied to real-world applications. I designed projects to teach students how to solve real problems. For example, I guided the students to collect web data and independently build a classifier for misinformation classification. Students were encouraged to submit their interesting and significant results to relevant conferences. (3) Facilitating Collaboration Between Students: Collaboration helps students hone teamwork skills which is important for their future career. I strongly encouraged the students to form groups in course projects. (4) Introducing Positive Peer Pressure: I followed a competition-based procedure to design the course project. Students have periodical submission options along the semester and their rankings of classification results will be informed promptly. Students strive for higher ranking in the project, and are passionate in improving their current solution and trying new techniques. From our statistics, it shows significant improvement comparing their final results with the initial attempts.

Teaching Interests. As a faculty member, I will be passionate in teaching and mentoring students. During my undergraduate and graduate study, I am fortunate to study various topics in the areas of computer science and engineering. I believe I am capable of teaching a wide range of core undergraduate courses. Given my research background, I am particularly equipped and excited to teach introductory and advanced courses on Machine Learning, Data Mining, Information Retrieval, Natural Language Processing, Social Network Analysis and Semantic Web. Furthermore, the broad range of research experience I have had over the years will allow me to develop courses and organize advanced seminars in these areas. I have plans to design and teach special topic courses on Security Issues in Social Media, Social Media Mining and Big Data Analytics. In addition to teaching, as a faculty member, I would passionately involve in student mentorship programs for both undergraduate and graduate students.