Teaching Statement
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My adviser used to tell me that the educational duty of a faculty member is “to put students in a position in which they can succeed.” Because student success can be defined using many factors, such as coursework, research, and professional development, as a faculty member, I will be happy to work with students on all these aspects. In this statement, I will describe my related past experiences and my future teaching interests.

Courses. With computer science becoming one of the most popular majors in many universities, I expect a faculty member in computer science to teach at least two types of classes: entry-level courses for non-CS undergraduates and advanced courses for CS undergraduates or graduate students. My first teaching experience involved serving as a teaching assistant for an entry-level CS course at the University of Wisconsin-Madison; this class was aimed at teaching 300 mainly non-CS students Java. I was responsible for holding office hours and grading homework for 50 students in the class. This experience gave me the opportunity to work with a large number of non-CS students, understand their difficulties in learning a programming language, explain computational thinking in plain language, and in some cases, encourage students when they lost confidence, especially during the middle portion of the class. From this exposure, I learned that patience is extremely important when interacting with non-CS students who are not in their comfort zones when learning CS material and that it is important to try to understand the reason for their confusion and not just try to alleviate the confusion itself. During this experience, I felt highly rewarded seeing students who began the class with no CS background becoming fluent in the first programming language they learned. The feeling I had as I saw students improving and getting nearer to achieving their dreams was one of the reasons I decided to work in academia instead of in industry.

Teaching Interests. As a faculty member, I am interested in teaching both entry-level and advanced classes in database systems. In addition, my research experience enables me to teach a unique interdisciplinary class that covers (1) data management, (2) machine learning, (3) bio-medical informatics, and (4) natural language processing and image processing. Such a class would not only teach students about state-of-the-arts in each area but would also allow them to gain hands-on experience in a range of techniques. My dissertation discusses over a dozen such applications, and I believe students can further enrich the diversity of this set of applications. Such a class could be titled “Big Data” and could give students an opportunity to learn about many cutting-edge technologies in a single class. I am interested in designing a syllabus and exploring how to teach this class.

Research and Professional Development. I would prefer a job in academia instead of an industrial job because of the opportunities to interact with students at all levels, educate them, and help them achieve their goals through research and professional development. I have extensive experience in mentoring undergraduate, master’s, and first-year PhD students as they work on their research projects. Most of my system research since 2014 has been conducted in collaboration with master’s or first-year PhD students. One of my major responsibilities is to hold daily meetings with these students to plan their daily and long-term research activities and to brief my adviser. Since 2013, I have been mentoring the DeepDive team, which consists of mainly then-freshman graduate students at Stanford, including Amir Abbas Sadeghian, Michael Sushkov, Zifei Shan, Sen Wu, and Feiran Wang. Together, we built the current DeepDive system. Under my supervision, Sushkov and Wu developed the winning entry for the TAC-KBP 2014 competition. I further advised Wu and Wang on their first research paper, which extends DeepDive’s ability in incremental maintainence. This work was published in VLDB 2014 and has been invited to the best of VLDB 2015 issue. Since 2014, I have been mentoring Stefan Hadjis and Firas Abuzaid, two freshman graduate students. I explore the system trade-off of one flavor of Deep Learning and guide Hadjis and Abuzaid to construct a system named Caffe con Troll that has been published in DanaC 2015. From this experience, Hadjis is now running his own research project to extend Caffe con Troll, and Abuzaid is joining MIT to continue his PhD study. In the year 2012, I mentored Vidhya Govindaraju, who is currently at Oracle, to conduct the study of jointly processing text and tables to help knowledge base construction. This work is published in ACL 2012.

Discussion. One lesson I have learned from mentoring, especially for students who have just started their research, is to make sure they can break their projects down into concrete, testable milestones, which allows them to make mistakes on their own but ensures that these mistakes can be captured early through objective measures. Therefore, students solve problems early in the research process and improve by learning from their mistakes. I am excited to apply this and other lessons I have learned through my mentoring experience to future students.