Teaching Statement

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1 Advising

One of the primary reasons I am seeking an academic career is to help students achieve their academic goals. Over the years at graduate school, I have grown comfortable with two pedagogical styles: fostering students' learning through apprenticeship; and encouraging exploratory learning through project-centric courses.

By focusing on projects, students can engage in a exploratory process. By actively investing in such a process, students can intuitively experiment with ideas hands-on and thus unlock know-how, leading to more confidence in their abilities. When students encounter difficulties, I believe that providing helpful guidance, as a mentor would to an apprentice, would help them discover new knowledge.

2 Teaching

As a teaching assistant (TA) for different courses, I have covered areas ranging from Business Information systems, Human Centered Design Research, to Software Architectures.

As a result of a temporary professor absence, I had the opportunity to lead two lecture sections for *Introduction to Business Information Systems* class. Each section had 60 students. I taught some of the fundamental principles and techniques of building business information systems. Additionally, throughout the academic quarter, I guided the students of this class through their projects, and ran assignment critiques. This experience has shown to me that teaching well is hard work, but also immensely rewarding. The

other two TA appointments demonstrate the breadth of technical, practical, and theoretical teaching perspectives I have learned through my years at UC Santa Cruz.

As a Master's student at San Jose State University, I assisted Dr. Mohamed Fayad in his courses on Software Engineering, Software Architectures, and Software Patterns. These technical courses gave me experience in explaining complex and conceptually challenging subject matters to students through problem sessions, and one-on-one tutoring.

3 Proposed Courses

I would like to teach a variety of courses, including: Foundations of Software Construction, Software Engineering for Web applications, Research Topics in Software Engineering, and Information Retrieval for Software Engineering.

3.0.1 Foundations of Software Construction

A hands on course which introduces the fundamental principles and techniques of software development. Topics for this course may include testing, design patterns, abstract data types, state machines, etc. In this course, students will merge theory with practice. They will learn to write software that is safe from bugs, testable, easy to understand, and ready for change.

3.0.2 Software Engineering for Web applications

A hands on course for students who already have some programming and software engineering experience. The goal is to give students the necessary tools for dealing with challenges unique to Web applications, such as security risks, concurrency, scalability, etc.

3.0.3 Research Topics in Software Engineering

A graduate level course focusing on reviewing seminal and recent papers in software engineering. Topics may include crowdsourced development, social coding, analysis of software ecosystems and mining of software repositories, etc. Students would read four to six papers each week and submit paper summaries. Additionally, this course would include a term project, where

students could choose to improve a technique described in the reviewed literature.

3.0.4 Information Retrieval for Software Engineering

A course for senior undergraduates and first year graduate students, focusing on the role of information retrieval in software engineering. Topics for this course may include design and development of code recommenders, code search engines, and survey techniques that assist developers in finding suitable components and code fragments for reuse.