Teaching Statement

I consider teaching one of the most effective ways to make the world better. Teachers had a strong influence in my life, second only to my family. While research can affect a large group of people, I feel that teaching has a much larger effect on a small group of people. In my life, some professors have had a bigger impact on me than any paper that I have ever read. I would like my teaching to have this kind of impact.

As a senior student in a large research group at the University of Illinois, I have had the pleasure of coordinating the research of several younger Ph.D. and M.S. students in the group. I have always liked helping new members by suggesting lists of papers to read and research problems to examine. In addition, I have coordinated the work of several group members on our research tool infrastructure.

While working in my M.S. degree in Spain, I instructed a group of 20 system administrators. I prepared and taught a course on networking and security that lasted a couple of months. Moreover, at the University of Illinois, I have been a substitute instructor several times. When my advisor has been out of town, I have volunteered to teach his classes. This has given me the opportunity to interact with students on multiple occasions. When I teach, I like to balance an abstract global view against real industrial examples. I like to impart a solid understanding with some additional insights that would be difficult to find in a book. I extract most of these insights from conferences or recent news.

Given my background in computer science, I am comfortable teaching any computer architecture class at the graduate and undergraduate level. I would like to teach the following subjects: single processor architectures, multiprocessor architectures, energy and performance issues, and emerging architectural approaches like processors-in-memory and thread level speculation. At the senior undergraduate level, I can also teach compiler and operating systems courses. At the undergraduate level, I can teach VLSI and networking courses.

Aside from already established courses, I would like to create new interdisciplinary courses. I feel that the emerging research topics in computer architecture are at the intersection between multiple areas. I would like to teach courses analyzing the interaction between architectures and compilers, and the interaction between performance and energy optimizations.

University professors are particularly fortunate in that they interact with groups of smart graduate students. I fondly remember becoming interested in computer architecture by participating in small reading groups. As a professor, I would like to create reading groups where junior students can discover their interests in computer architecture.