Teaching Statement
Michael K. Papamichael

During my graduate studies at Carnegie Mellon and previously at the University of Crete, I had several opportunities to serve as a TA for undergraduate and graduate level courses, mentor students, deliver guest lectures, and disseminate the outcomes of my research through tutorials. These experiences have helped me develop a deeper appreciation for the importance of teaching and realize how much I enjoy teaching and working with students in and out of the classroom.

Approach

Teaching. During lectures and recitations I strive to engage students by actively encouraging participation and keeping lectures interactive. Not only have I found that this approach makes lectures more enjoyable for students, but it also helps me gauge how students are keeping up, and, if necessary, adjust my pace and the difficulty of the material. I like providing the intuition behind concepts and, whenever possible, turn to real-world examples and anecdotes to help students better relate with the material. At the same time, I try to point out more general principles and concepts that transcend the specific topic, technique, or issue being discussed. I try to maintain a casual friendly atmosphere in the classroom and be very approachable; I particularly enjoy post-class discussions with students.

Mentoring. I draw inspiration from my advisor’s approach to student shepherding and mentoring. I believe an important aspect of mentoring PhD students is striking the proper balance between guiding students in their early years and giving them more freedom as they mature and are able to develop independently. Similarly, I believe it is important to challenge students to do their best, but at the same time avoid overwhelming them or putting them under a lot of stress. I would like to help my students find topics they truly enjoy so they can excel and be passionate about their research. Within my group I hope to maintain a positive open friendly atmosphere that fosters and promotes collaboration. Ultimately, I believe that a healthy, balanced, and respectful advisor-student relationship is key to student happiness and success.

Experience

As a graduate student at Carnegie Mellon University and previously at the University of Crete, I have served as a TA for six graduate and undergraduate courses. My responsibilities as a TA included, preparing slides and delivering recitations, organizing and managing student projects, contributing to exam questions, holding office hours, supervising lab sessions, and devising and grading homework assignments. Aside from my duties as a TA, I also had the pleasure of mentoring undergraduate students working on research projects and delivering invited guest lectures for multiple undergraduate and graduate courses at Carnegie Mellon. Sample videos of some of my recent guest lectures that were broadcast can be found at http://bit.ly/15418_papamichael (lecture on “Interconnection Networks” for the undergraduate 15-418/15-618 “Parallel Computer Architecture and Programming” course) and at http://bit.ly/18740_papamichael (lecture on “Advanced Topics in Interconnection Networks” for the graduate-level 18-740/15-740 “Computer Architecture” course).

For the purposes of disseminating the outcomes of my research, I have participated in organizing and delivering a number of tutorials on many projects I have worked on, including the CONNECT Network-on-Chip generator, the CoRAM FPGA memory abstraction, and the Flexus and ProtoFlex full-system simulation frameworks, at major architecture-related conferences, such as the International Symposium on Microarchitecture (MICRO), the International Symposium on Field Programmable Gate Arrays (FPGA), and the International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS). Footage from a recent tutorial I delivered on the CONNECT Network-on-Chip generator is available at http://bit.ly/connect_tutorial_papamichael.

To facilitate teaching at the University of Crete, I designed and implemented an online assignment submission and examination slot reservation system (http://www.cs.cmu.edu/~mpapamic/projects/sr.html) that is still actively used and has served more than 20,000 students across multiple courses since 2006. Moreover, as a TA for the “Embedded Processors and Systems” course, I designed and fabricated a custom printed-circuit board for a daughter card that enhanced our lab infrastructure by adding communication and programming support for a new class of microcontrollers.
**Course Offerings**

Based on my research and teaching experience, I am most qualified to teach undergraduate courses in digital logic design, embedded processors and systems, computer organization, computer architecture, and parallel programming. I feel comfortable teaching introductory electrical engineering and computer science courses and, with some preparation, I could also teach introductory courses in compilers, networks, machine learning, and VLSI. At the graduate level I can offer courses in advanced computer architecture, parallel and multi-core systems, on-chip interconnects, packet switch architecture, and, with some additional preparation, VLSI CAD tool algorithms and EDA flows. I would also be interested in offering advanced seminar-style courses covering recent research topics in computer architecture.

**Summary**

As an educator, I strive to engage students and convey my excitement on a topic. I get great satisfaction seeing students make progress in their work and succeed in meeting their goals. Overall, my involvement with teaching has been one of the most rewarding experiences I have had as a graduate student. This experience is one of the main reasons I want to pursue a career in academia.