Teaching Statement

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Teaching is one of the main motivations in my pursuit of an academic career. As a computer scientist, my goal is to help students acquire a fundamental understanding of the general principles of our field, and teach them how to apply these concepts to solve practical problems. In doing so, students build a strong background that both helps them as future engineers working with continuously changing technologies, and also provides them with the tools to become good researchers. I also consider teaching an integral component of my research, since the interaction with students prompts me to reconsider established ideas and form new perspectives on how to approach problems in our field.

Teaching Experience. Having worked and studied in the USA (University of Washington), Greece (National Technical University of Athens) and Germany (Technical University of Munich), I have been part of three very different higher education systems. These experiences have shaped my pedagogical approach and have made me able to intellectually engage students in diverse classrooms.

My involvement with teaching began during my early undergraduate years, as a lab supervisor for the introductory course on Programming. Since this was a first-semester course, many students were not familiar with the basic programming concepts. I discovered that the most effective way to help them with the assignments was to break the problem into smaller subtasks that were simpler to solve, and present them with examples that they could think about concretely. Having thus exposed students to the actual process of building a program, they were able to better understand how to approach the solution. I also served as a teaching assistant for the Introduction to Algorithms class, where my responsibilities were to design and grade the weekly class assignments.

During my graduate studies, I have been involved in teaching both undergraduate classes (Introduction to Data Management) and graduate classes (Randomized Algorithms, Principles of Database Management Systems). For the undergraduate class in particular, I had to design and teach a weekly discussion section. Since the purpose of the section was to build on material already taught during lectures, I had to devise ways of keeping the students engaged. Towards this goal, I used live coding to explain how the ideas in the lecture can be implemented in practice, as well as concrete examples run by hand on the whiteboard. I further encouraged the students to participate actively by asking frequent questions and letting them take the initiative when solving a problem.

Outreach. I am a strong advocate of the importance of computer science education outside of academia. To this end, I have volunteered as a tutor for high school students to prepare them for the International Olympiad in Informatics, teaching them core algorithmic ideas that they could use for problem solving. I have also participated in a program of the Greek Ministry of Education called “Go Online”, where my responsibility was to teach small businesses about e-business practices.

Teaching Interests. I am looking forward to teaching courses related to data management at all levels. For an undergraduate database course, my plan is to cover all the general principles and show how they can be applied both to traditional databases, and also to several modern big data systems. The goal of tailoring the class in such a way is to expose students to modern technologies, while ensuring that the general principles of data management are well-understood. At the graduate level, I envision teaching a course on the theoretical foundations of data management, exploring recent exciting areas of research (worst-case optimal algorithms, data privacy, foundations of big data processing). I would also like to create a class that discusses the core concepts of parallel systems across the areas of databases, systems and machine learning. I believe that cross-examining these areas will provide insights into how we should think about modeling large-scale parallel systems. Apart from courses related to data management, I would also be interested in teaching any foundational computer science course, as well as any class on Algorithms and Complexity.