

# Teaching Statement

Bardia Sadri

sadri@cs.toronto.edu  
<http://www.cs.toronto.edu/~sadri/>

**Teaching Philosophy.** The sort of classes I expect to teach are mathematical by nature and I consider myself to have developed a refined notion of teaching quality in mathematics. I believe that the traditional treatment of mathematical subjects through a series of lemmata and theorems in a bottom-up build-up of the results, as is common in the written mathematics literature, often projects rather poorly in the classroom. I have had several encounters with teachers that precisely followed this rigorous textbook style in the class and I almost always found it a flawed course of action. I do think that mathematics must often be thought in a top-down manner: start from the coarsest (possibly not quite true) statements that carry the gist of the matter and conveys the most intuition, and then fill in the gaps, while fixing the inaccuracies, leaving as exercise any technical details that the pupils can follow on their own.

I also think good teaching has a lot to do with having good *taste*; for many teaching media; for the language and choice of words, for the pace and emphasis on harder to grasp concepts, for the choice of presentation tools, and for the quality of typesetting and illustrations among others. Good taste drives teachers to acquaint themselves with the latest technology for presentation or to plan on how to best stage their classes. I think I have a quite well-developed taste in teaching and I think this should be visible through the amount of work and detail that goes into the preparation of my presentations.

**Experience and Future Plans.** In graduate school I was a teaching assistant for seven semesters; thanks mostly to the shortage of funding among theory professors. At UIUC teaching assistantship is not combined by research assistantship, but fully replaces it, thus a TA is expected to spend 20 hours per week on this job. I can therefore safely claim that I have quite a lot of experience in dealing with students. A detailed list of classes for which I have been a TA can be found in my CV. Essentially all these classes have been in theoretical computer science. As a teaching assistant, I taught a number of lectures in each semester, designed homework and exam problems, wrote class notes and homework solutions, maintained class website and newsgroups, held office hours and review sessions, and of course graded a good number of papers. But perhaps the most useful part of being a TA for such a long time is the gained insight into the students' psychology, from what makes them like a class to the level of pressure they can fruitfully tolerate.

**Classes to Teach.** I can easily and comfortably teach almost any standard theoretical computer science class, most notably the following:

Theory of Computation (TAed for 4 semesters),  
Discrete Mathematics (TAed for 2 semesters), and  
Algorithms and Data structures.

I can also teach these common but more specialized theory classes on

Complexity Theory,  
Randomized Algorithms, and  
Combinatorial Optimization.

And of course I would very much like to teach classes closest to my research area, such as

Computational Geometry,  
Computational Topology,  
Surface Reconstruction and Meshing, or  
Geometric optimization.

I am also interested in taking on the challenge of teaching classes not exactly in (but relatively close to) my speciality, such as Computer Graphics or algorithms in Geometric Biology, to familiarize myself more closely with such topics.