

TEACHING STATEMENT
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Teaching is one of the most rewarding aspects of an academic career. It presents an opportunity to meet and influence many bright people, year after year. I am grateful for the many great teachers I have had and I hope to follow in their footsteps. During my graduate studies, I have begun to focus not only on *what* material my teachers were presenting, but also on *how* they presented it. My experience as a teaching assistant gave me the opportunity to experiment with some of the techniques I observed as a student.

The method that works best for me (in small classes) is to structure the lecture in the form of a sequence of questions. This takes more preparation than a straightforward lecture and requires establishing a rapport with students. I first experimented with this technique in my mini-course on number theory that I ran at Brown as a teaching assistant for CS 151: Introduction to Cryptography. There were roughly a dozen students in the class seated at a large table. I went around the room and asked the students questions in order. Each question led to solving a piece of the problem we were working on. I have seen a Brown professor successfully run a thirty-person classroom by constantly calling on random students, but this might not work in all large classes. When I took large classes at Brandeis, I always appreciated receiving lecture notes at the start of class because it put each part of the lesson in perspective. Distributing handouts with supplementary material can be especially helpful in classes where students have varied levels of preparation because it allows students to follow the lecture at their own pace.

Research with graduate and undergraduate students is an important part of teaching. Despite the mathematical rigor of cryptography research, it is still possible to break research problems into pieces that are accessible to students at different levels. For example, secret sharing is a relatively simple technique that can lead to elegant solutions to many cryptographic problems. Research projects should not only be interesting, but also give students a feeling of having accomplished something significant. My undergraduate research experience at Brandeis motivated me to apply to graduate school and pursue an academic career. I believe that instilling in students a well-earned sense of accomplishment is especially important for retaining women and minorities in computer science.

I am ready to teach all core computer science classes as well as advanced classes in algorithms, information theory, data compression, and security. I am especially excited about the possibility to develop new courses in cryptography, steganography (message hiding) and related topics.