ERAN SEGAL

Teaching Statement

From tutoring jobs during my high school and undergraduate studies, through teaching assistant and advisory positions during my graduate studies, I have always enjoyed teaching. I found the interactions with students to be very rewarding, and I view the opportunity to educate students, and assist them in becoming prominent researchers, as one of my main career goals.

As a teaching assistant (TA) at Stanford, I took an active role in designing assignments and exams, in addition to leading exercise sessions and holding office hours. In particular, I assisted Prof. Daphne Koller in CS221 (Artificial Intelligence), a class with over one hundred students, where I was the head TA for a group of six assistants. As a teaching assistant for CS221, I had the opportunity to help in shaping the curriculum and in designing exercies and programming projects. From this experience I learned about many of the challenges that arise in teaching a large class. I am currently assisting Prof. Serge Plotkin in teaching CS161 (Design and Analysis of Algorithms), which also has over one hundred students. I chose this particular class, as I believe that in this type of introductory class, I can utilize my extensive industry experience to help in shaping the computer science foundations of many students at an early stage in their academic career. Finally, I was also a TA for Prof. Daphne Koller in CS228 (Probabilistic Models in Artificial Intelligence), an advanced graduate level course, where I learned much about how to design a class on advanced topics in a way that motivates students to pursue their research in the area.

During my graduate studies, I have also had many opportunities to interact with students in an advisory role. I advised four undergraduates and two master students as research assistants, each for a period of over one year, and an additional five undergraduates for summer projects. In each case, I designed the research project, and worked closely with the students to monitor their progress. From this experience, I have learned how to formulate a concrete research agenda, and how to excite and motivate students to take an active role in further developing and implementing it. My interaction with these students was very rewarding, and led to several publications and significant research results. Motivated by this research, three of the students I advised are currently pursuing a Ph.D in top U.S. universities. I also helped Prof. Koller in advising a Ph.D student who was starting his research work. All of these experiences have taught me a lot about advising students in their first steps as young researchers. I am looking forward to advising and collaborating with many students throughout my career.

At the undergraduate level, I feel qualified to teach classes in the general areas of machine learning, bioinformatics, and theoretical computer science. Appropriate classes include: Computational Molecular Biology, Machine Learning, Probability Theory for Computer Scientists, Data Structures and Algorithms, and Complexity Theory. At the graduate level, I would be interested in teaching classes on statistical learning, with emphasis on probabilistic graphical models. In addition, I would like to design a novel interdisciplinary course on *Integrative Genomics and Systems Biology*, which will discuss how to integrate and model the heterogeneous genomic data produced by high-throughput technologies, for studying a broad range of biological questions. The course will focus on the formal and principled frameworks that have been applied. I believe that my formal training in both Computer Science and Genetics, combined with my research experience in these areas, puts me in a good position to design and teach such a course. In addition, such a course, which spans both computer science and biology, should attract a large number of students, both at the undergraduate and graduate level, and will assist in the training of a new generation of researchers, who speak both the language of computer science and the language of biology. Such researchers are critical to the transition of biology into an information science.