

Andrei Sharf - Teaching Statement

As a teacher, my goal is in general two-fold. First, to provide students with tools and in-depth understanding of the presented subject. Second and not less important, to awake curiosity and motivation in students as well as a sense of independence in approaching problems in computer science in general and computer graphics in particular.

Motivation In order to inspire values of curiosity, motivation and independence in my students I encourage a dynamic dialogue in class. Questions and answers, riddles and discussion are essential keys to progress as it stimulates and encourages students to investigate the various topics. In my classes I focus on the intuition and motivation behind the problems which I teach. Since a positive atmosphere in class is essential to the learning experience, I sometime start with historical trivia or humor before plunging into the complex material. I believe a teachers enthusiasm for a subject is contagious, and I am glad when it is passed on in class or in one-on-one conversations. I also believe that my love for research should be evident to students, as it will encourage them to follow the research path.

Understanding To enhance the students understanding I try to found my teaching on certain principles. When explaining key algorithms and techniques I like to provide the formal arguments behind the algorithmic choices and properties. However, I usually focus on the fundamental concepts and general ideas while requesting the students to independently work on specific exercises and problems. I believe that it is much easier to understand complex concepts by grasping the general idea from a very simplified model or example. Similarly, whenever possible I prefer drawing figures and schemes rather than words. I believe that "a picture is worth a thousand words". In my teaching, I try to provide many figures and examples since it typically helps students to understand and memorize the material.

Experience During my PhD studies in Tel-Aviv University, I taught various courses in Computer Science and Computer Graphics as a teaching assistant (TA) and Instructor Responsible (IR). Starting in 2003, for two consecutive years I had been teaching introductory topics in CS as a TA. I also taught and supervised for three years as an IR the "Software Programming" course, which is a second year undergraduate course, aimed at introducing students to software engineering and large-scale programming practices. As a researcher in an applied field, I appreciate the importance of good software engineering and solid programming background for students. I believe that my expertise both from my industry years and as a researcher provides me with the knowledge to teach most undergraduate software engineering and design courses. From 2006, I had been teaching "Operating Systems" for two consecutive years as an TA. During those years I had to redesign the material and homework assignments of this course due to a change in course emphasis from theory to engineering context.

As a TA I also taught the introductory and advanced courses in Computer Graphics. Teaching these courses for the first time meant revisiting a lot of topics that required from me not only to better understand the issues, but also to find ways to make them understandable and intriguing to others. One of my major goals when teaching those courses was to interest students and draw them closer to research topics and open problems in the area of graphics.

The computer graphics workshop is a third year undergraduate or graduate entry level course which I taught for one year and a half as an IR. Teaching an advanced course in my area of expertise was both enjoyable and demanding. It required deep detailed knowledge of the topics presented as well as insightful guidance and teaching in order to engage the students and encourage their curiosity in the subject. In 2006, one of the workshop projects under my guidance won the second place at the Tel-Aviv University Computer Science workshops competition.

To summarize, I enjoy developing and teaching courses in subjects closely related to my research at both graduate and undergraduate levels. In addition to graphics related subjects, I have the experience and knowledge to teach fundamental computer science and software development classes. I have also the experience of one-on-one work and guidance of students in undergraduate projects and graduate research.