

Teaching Statement for Lucas Kovar

My first teaching experience was as an undergraduate, when I worked for two years as a tutor in math and physics. It was here that I first learned how to explain the intuitions behind technical concepts and how to “debug” an incorrectly solved problem to find the error or misunderstanding. Later, as a first-year graduate student, I served as a teaching assistant for an introductory computer science course. This introduced me to some of the mechanics of teaching a class, such as leading lab sections, designing assignments, and grading students’ work. In the rest of my time in graduate school, I have given guest lectures in a graduate animation course, informally helped graphics students with their course work and projects, and led numerous discussions of technical papers. While I have not yet taught a full class or designed its curriculum, I am confident that these varied experiences have prepared me to do so.

My teaching style uses concrete problems and intuitions to motivate more rigorous theories and then uses these theories to motivate practical algorithms. I believe this promotes a deep understanding of why certain methods are used while at the same time clarifying the underlying mathematics.

I am primarily interested in teaching graphics courses, although I am equipped to teach courses on other topics. For an introductory graphics course, I would place special emphasis on mathematical foundations (which is what differentiates computer graphics from purely artistic endeavors) and real-time methods suitable for games (which are particularly accessible while still motivating and addressing fundamental issues). I am also interested in teaching a graduate seminar on character animation, my dissertation research area. This course would cover procedural and physically-based motion synthesis; motion capture technology and data processing; signal processing, optimization, and physically-based methods for motion editing; example-based synthesis using interpolation and graph structures; and methods for character skinning and secondary mesh deformations.