Executive Summary:

The premise of this proposal is that students will better understand computer science concepts by observing them in software animations. The Web has a large collection of excellent animation tools that illustrate a host of computing concepts. We propose to develop an online portal for students to view and manipulate these visualization tools that animate core concepts for the computer science discipline. Student interactions with the portal will be course specific, i.e. students will log on for a specific course and be shown tools relevant to the course. The portal will include short quizzes where students document their observations of the animation as well as general understanding of the concept in question. Through this process, we will capture data about the student’s use of the portal. To evaluate the impact, we will coordinate with instructors of three lower-level classes to include common questions across exams corresponding to concepts available on the portal. We will then compare the performance for these questions for students that utilized the portal against those that did not. We expect to see better results for the first group of students. Evaluation will also consider the number of students using the system and the frequency of use.