

PROF. STEVEN TANIMOTO

"SUPPORTING COLLABORATIVE PROBLEM SOLVING IN MULTIMEDIA GAME DESIGN"

ABSTRACT:

One of the great challenges for computer scientists today is to show how computation can be integrated with social networking to empower people to solve complex problems. This talk describes a project called CoSolve that is exploring the use of the classical theory of problem solving, developed in the artificial intelligence community, as a foundation for computer-supported collaborative design. While applying any formal problem-solving methodology faces the issue of bridging the gap between toy problems and wicked, real-world problems, the CoSolve structure permits working on the full range of problem types. One type of problem, more complex than typical toy problems such as puzzles, but much simpler than wicked problems, is the problem of multimedia game design. For research purposes, we have specified a class of games called PRIME games that incorporate four key elements: a maze of rooms to be navigated by players, a set of music puzzles and image processing puzzles, and a rule-based game logic. The talk will present several of the issues being addressed by the project, including user interface, use of intelligent agents, problem posing versus solving, and prospective applications in image processing.

SHORT BIOGRAPHY:

Steven Tanimoto received the Ph.D. degree from Princeton University in 1975. Since 1977, he has been a member of the faculty in computer science at the University of Washington. From 1986-1990, he served as Editor-in-Chief of the IEEE Transactions on Pattern Analysis and Machine Intelligence. He is the author of "The Elements of Artificial Intelligence: An Introduction Using Lisp" as well as the forthcoming book, "Pixels, Numbers, and Programs: An Introduction to Image Processing." He has also served on the steering committee for the IEEE Symposia on Visual Languages and Human Centric Computing. He is currently a member of the IEEE Computer Society's Board of Governors and the society's Publications Board. He conducts research on online support for collaborative problem solving.