Additional Information - Philip Guo (pgbovine@mit.edu)

Research Experience:
- Feb 2004 to present: MIT Program Analysis Group (Prof. Michael Ernst)
(already described in Statement of Purpose)

- Sep 2003 to Feb 2004: MIT Computer Graphics Group (Prof. Fredo Durand)

I developed an image editing tool geared towards photographers who want to simulate the darkroom techniques of dodging and burning on digital images. My primary research contribution was a bilateral selection generation algorithm that takes both spatial and intensity information into account to generate natural-looking selections from imprecise hand-drawn areas on a digital image. This algorithm allows the user to make local brightness and contrast adjustments with less effort and better-looking results when compared to using conventional image editing software.

- Sep 2002 to May 2003: MIT Teacher Education Program (Prof. Eric Klopfer)

I designed and implemented 5 Participatory Simulations educational games for Palm OS handheld devices. I also developed a software module for IR communications and a framework to enable quick creation of related applications. These games are intended to stimulate teamwork, group learning, cooperation, and interest in science among middle and high school students. They have been successfully deployed in schools throughout the country and featured in the Boston Globe newspaper and the Boston CBS 4 evening news program.

Teaching Experience:
I will serve as a teaching assistant for the Laboratory in Software Engineering course in the upcoming Spring 2006 semester. I have served as an undergraduate laboratory teaching assistant for 3 courses:
- Fall 2004: Laboratory in Software Engineering
- Fall 2004: Introductory Digital Systems Laboratory
- Spring 2002: Structure and Interpretation of Computer Programs

Work Experience:
Summer 2003 and 2004: Software engineering intern at Teradyne - Agoura Hills, CA
- Simulations, drivers, and pattern compiler for automated tester hardware
- Implemented improved virtual memory system for hardware simulator

Summer 2002: Software engineering intern at Codehost, Inc. - Culver City, CA
- Developed handwriting recognition app. front-end for embedded Linux tablet PC
- Performed testing of Linux/UNIX printer drivers and GUI software

Publications:
Philip Guo and Stephen McCamant. "A Scalable Mixed-Level Framework for Dynamic Analysis of C/C++ Programs". MIT CSAIL Student Workshop, September 2005.

Philip Guo and Stephen McCamant. "Dynamic Variable Comparability Analysis for C and C++ Programs". MIT CSAIL Student Workshop, September 2005.

Philip J. Guo, Jeff H. Perkins, Stephen McCamant, and Michael D. Ernst. "Dynamic Comparability Type Inference for C/C++ and Java". (Submitted for publication)