From: Nicolas Ward '05
Re: E90 Project Proposal Memo

I will develop a simulation module for the robots, thus continuing the work I have done over the past two years with Prof. Maxwell and the robots. This module will replace the lowest level modules in our robotics system, tricking all of the other modules into thinking that they are receiving real input from and sending real output to one of our robots. The simulator will contain a representation of a three-dimensional world with which the robot modules, including the human interface I developed, can interact.

By deploying this simulator, along with the other modules, on a Linux PC, we can test most aspects of module and interface operation without using a physical robot. This allows us to reduce the risk of catastrophic hardware failures on our aging robots.

I plan to use a few open-source libraries, namely OpenGL and the Open Dynamics Engine, to handle the low-level physical calculations and graphics display, so that I can focus on creating a robust and realistic simulator that integrates with our existing systems.