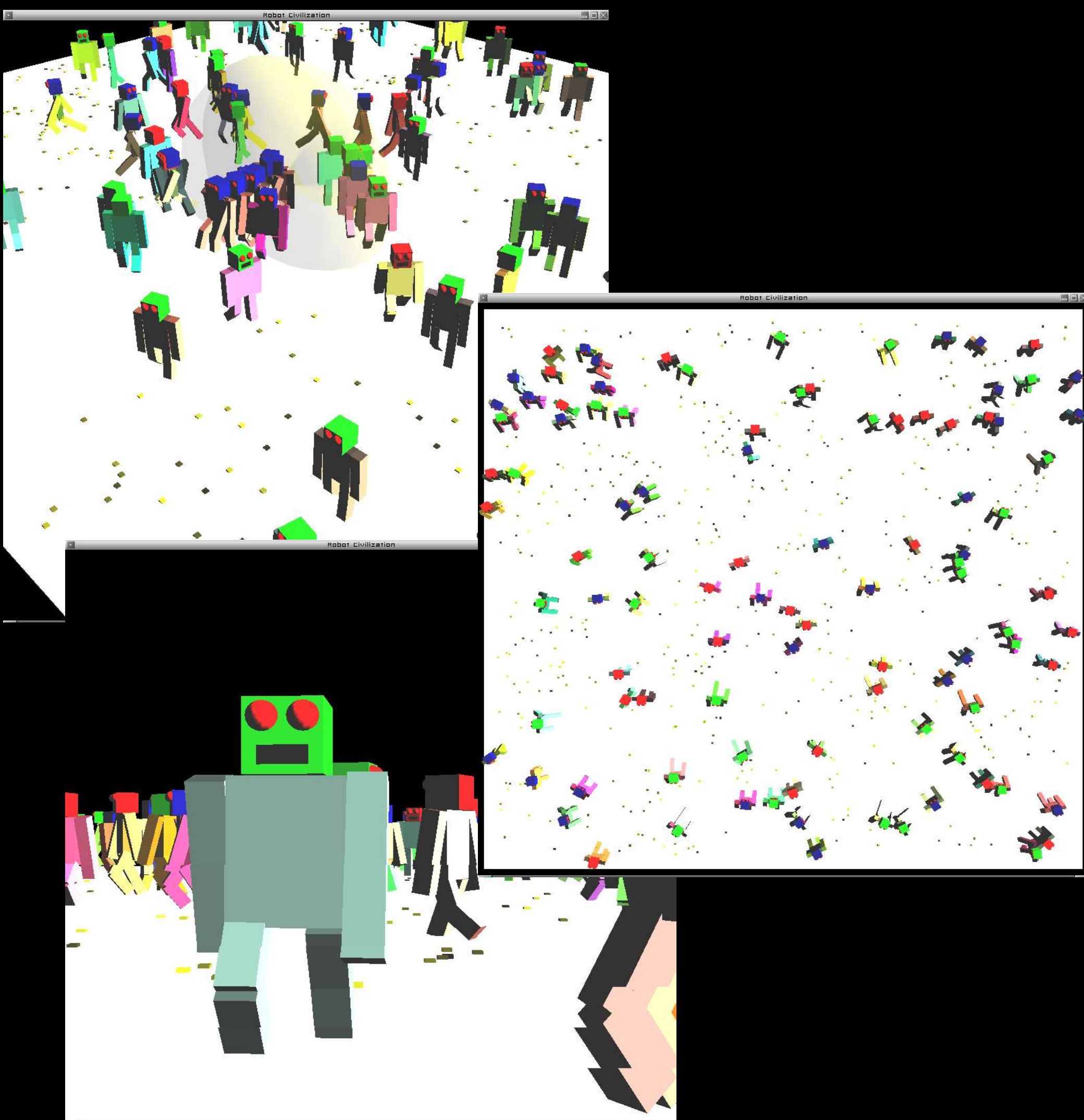**Abstract:** My project is an agent based simulation, posing robots in a "game of life", with each new generation of robot comes new genes using a random number selection process creating the mutations and evolutions that in real life we experience for DNA cross over and such.

Three different views of the simulation.

The Simulation: As stated in my abstract.

The Process: The base of my program was not the genetics, but the graphics itself. First one robot, then a random A.I. for it. I then modified the world to sustain several robots, with dying a breeding. After introducing 2 more A.I.s a "group" A.I. and a "battery" A.I. promoting grouping and collecting batteries selectively. I then tweaked the environment and code until it could sustain life. I then programed in several possible places for environmental interaction, like viruses and the batteries. I added the graphical output for easier analysis. Finally I created the random number selection process to splice the genes of the parents and create a child. The heart of the program.

Graph of population outputted by the simulation.

The Game: There is the above stated "simulation" version of my program, and a later created "game" version. The game version includes all the same components as the simulation but also has a user controlled robot with "laser eyes" and "grenade launchers" use to kill the other robots. It also includes "Bosses".

The Process: Taking the simulation version and modifying it was easy, first removing the natural deaths and graph. Then I introduced and tweaked the user controls and the user controlled robot. Then adding lasers and grenades and all the necessary coding, i finally added a status display embedded window in the top left corner. I continually add new pieces of flare to the program, such as bosses.