

1106-92-1814

John M Calhoun* (john.m.calhoun@ttu.edu). *large scale multi agent simulation of infectious disease on the lazarus gpu cluster with applications to epidemiology and zombies.*

the lazarus project provides a gpu computing cluster to run and analyze multi-agent simulations. infectious diseases such as malaria or a zombie like virus can be simulated and data can be collected at a more intense level than would be possible in the real world. this data can then be studied in a number of different ways to gain insight in to how these diseases spread and predict their macro-system behavior from micro and individual characteristics. in particular, machine learning and neural networks can be used to understand the data. all of these tasks from simulation to analysis involve many computationally intensive tasks and leveraging powerful computers such as the gpu cluster at texas tech can allow these techniques to be fully utilized. the many challenges, solutions, and results from this project will be discussed. (Received September 15, 2014)