

## Science Funder Jeffrey Epstein Launches Radical Emotional Software for the Gaming Industry.

Virtual gaming is about to warp through a black hole, thanks to a band of scientists in Hong Kong and a hedge funder with a zealous science background, called Jeffrey Epstein. Indeed, game programming is moving away from algorithmic robots to a twilight realm of emotional thinkers, taking online, video and toy entrepreneurs, one step closer to Star Trek's 'Holodeck'.

For years, in virtual gaming, the only intelligent player was the person playing the game, responding to non-reactive obstacles. At most, opponents could blow up or morph into something else. Whatever the reaction, it was a simple linear or algorithmic response (if A, then B, if A+D, then C).

By the 1970's, opponents became more complex with the development of virtual chess, where the program responded to a vast network of algorithmic possibilities: up to 10123 chess board variations to be exact. But even in those scenarios, the program remains purely reactive and deterministic: it does not have any goals, nor does it not aim for check mate, but simply responds to a series of steps that lead to that direction.

Today's gaming characters from virtual soldiers to Tinkerbell are also vastly more complex than their dash line tennis forbearers. Like the chess program, virtual soldiers can react to a wide variation of landscape scenarios and respond in a myriad of ways, based on each case.

The Artificial Intelligence (AI) group in Hong Kong behind this new emotional software is called Open Cog. As a non-profit foundation, Open Cog ('Cognition for All') lead by co-founder Ben Goertzel, develops programming language for the AI community to use and share, in what is still a very fragmented field. However, in efforts to map the architecture of the human mind, Open Cog also programed three game characters that push past traditional algorithms:

Specifically using:

- AtomSpace, a neural memory system. A database of concepts or 'atoms'.
- MindAgents
- Atoms are linked via algorithms—links get reinforced with repetition, and weaker with no repetition.
- The use of several algorithms all functioning at the same time: "cognitive synergy"
- OpenPsi—inspired by Joscha Bach's MicroPsi Project: the use of motivation tanks that can be restored or depleted: energy, water, integrity, Affiliation, certainty, competence. The status of these tanks are effected by various interactions, and interwoven into each algorithm. A tank's status can have priority over other tanks, and change the course of the algorithm.
- Learning capacity: imitation and reinforcement of links between atoms.
- <http://www.artificialbrains.com/opencog>
- [http://en.wikipedia.org/wiki/Artificial\\_intelligence\\_\(video\\_games\)](http://en.wikipedia.org/wiki/Artificial_intelligence_(video_games))
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For entrepreneurs, Open Cog supplies a toolkit to incorporate their emotional characters into whatever applications the market is using: from virtual landscapes to toys and even robots. As a showcase, Open Cog has also developed its own 3D landscape for its characters to function in, inspired largely by the popular building game called Minecraft. To date, the three highly intelligent characters are: a girl, a ghost and a robot.

Open Cog's goals differ from the entrepreneurial developers that are already lining up to exploit the new software. "AI emotional models allow scientists to test their hypothesis about the mind," Jeffrey Epstein remarked, the financial guru behind this effort. "The disparity between these models and our experience of the mind is an invaluable guide to follow. It's somewhat like building a car, with no instructions, but our impression of what a car can do."

Over the last ten years, Jeffrey Epstein has become one of the largest backers of cutting edge science around the world. Like Open Cog, he is motivated by learning more about the mind, versus creating a new start-up product. He currently sits on the board of the Mind, Brain and Behavior Committee at Harvard. According to *New York Magazine* and *National Review*, Epstein has donated up to \$200 million a year to eminent scientists, including: Stephen Hawking, Marvin Minsky, Eric Lander, George Church, and Nobel laureate physicists Gerard 't Hooft, David Gross, and Frank Wilczek. In 2003, Epstein founded the Program for Evolutionary Dynamics at Harvard University, with a \$30 million dollar gift to the university. The Program studies the mathematical evolution of micro-biology and has made key discoveries into the treatment of cancer, HIV and other infectious diseases.

The launch of the new software has already had a huge impact on the gaming **industry: how...**

As we get closer to mapping the vast mechanics of the human mind, it's possible that we'll discover that we are more pre-determined than we think. It's possible that free will, though weighing a million different neural filaments or 'atoms', is set in genetic stone—but it's also possible that the mind, in its mechanism, can change its own architecture and thus continue to push our destiny.