TITLE:

Jeffrey Epstein AI
Advancing Artificial Intelligence

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HOMEPAGE

Replace image with an AI related image. Make slightly smaller in height. Remove Jeffrey's photo from front page. Change red bar, theme and titles to a slate blue. Below homepage image, have this title below (aligned left):

Currently in AI: Jeffrey Epstein Helps Launch AI in Ethiopia

Artificial Intelligence and information technology is actually thriving in Ethiopia thanks to an innovative AI group in Hong Kong called OpenCog and the funding of the Hong Kong government and the Jeffrey Epstein VI Foundation in New York. The recipient of funding was the AI lab in Sidist Killo, called Addis AI Lab and it has quickly become the computer science pioneer in Sub-Saharan Africa.

"We are very excited by the technology coming out of the Addis AI Lab," Jeffrey Epstein asserted, founder of the Jeffrey Epstein VI Foundation, which supports cutting edge science research around the world. "With economic and education growth rates as one of the highest in the world, it makes perfect sense to lay an AI foundation in the heart of Ethiopia's capital."

In fact, Ethiopia has an astounding foundation for science technology: 95% of students graduate from primary school, 60-70% from high school, and there are almost 100 universities. The software market has also doubled in the past three years and the Ministry of Trade and Industry has registered over 700 licensed companies in computer technology and 95 software and computer networking businesses.

Similar to OpenCog, its founder in Hong Kong, the Addis Lab provides free, open-source programming to the community at large and collaborates with universities, schools and the government, such as the Addis Ababa Institute of Science and Technology. Founded by Ben Goertzel, Chairman of OpenCog and Getnet Asefa, Manager and co-founder of Addis AI lab, the team's focus includes machine learning based data analysis, computational linguistics, computer vision, mobile robots and cognitive robotics, cognitive architectures and artificial general intelligence.

"Addis AI's goal is to further sustainable and cutting edge development in Ethiopia and Africa by what's called, technology leapfrogging: jumping straight into advance technological applications to save time and

keep up with the developed world," Jeffrey Epstein commented. "Ethiopia has the ideal educational basis for this and to be catapulted into the future."

ABOUT PAGE:

About Jeffrey Epstein AI

Jeffrey Epstein AI funds an array of innovative projects in the field of Artificial Intelligence. Since its inception as a formal field of study in the 1950's, Artificial Intelligence (AI) has advanced substantially but has also fragmented into many different areas and goals of research. As a result, there is much need for consensus building, classification and collaboration in the field of AI. Jeffrey Epstein AI provides valuable funding and support not only in furthering AI research around the world, but also in unifying it, to help scientists collaborate and achieve their vision.

Jeffrey Epstein AI was established by science philanthropist and New York financier, Jeffrey Epstein as a division of the Jeffrey Epstein VI Foundation. The Jeffrey Epstein VI Foundation funds cutting edge science research around the world and established the Program for Evolutionary Dynamics at Harvard University, which studies the evolution of micro-systems with the use of mathematics. The foundation also maintains a keen interest in neuroscience, cognition and the brain.

What is Artificial Intelligence?

Artificial Intelligence (AI) is any man-made machine that can process information and react to it in some productive way. John McCarthy, the brilliant computer and cognitive scientist, who coined the term in 1955, defined AI as "the science and engineering of making intelligent machines."

"Although the study of AI dates back to 300 B.C. when binary coding was explored, AI was formerly established as a field of study at a conference at Dartmouth College in the summer of 1956", Jeffrey Epstein points out. The attendees, including John McCarthy, Marvin Minsky, Allen Newell and Herbert Simon all became AI pioneers in the decades to come. Together with their students, they wrote programs that were astonishing: computers solving word problems in algebra, proving logical theorems and speaking English. By the mid 1960's, however, computer

technology remained hugely expensive and inaccessible and research in the U.S. was limited for the most part to the Department of Defense.

By the 1980's, AI research was revived by the introduction of home computers, led by IBM and 'expert systems', programs that ran on basic linear analysis. And by the 1990's and early 21st century, AI was increasingly used for commercial purposes, such as data mining, logistics, medical diagnosis and many other areas throughout industry, with Oracle playing a key role alongside IBM.

By the turn of the century, AI was advancing substantially in basic language programming, linear binary coding and robot technology. At the same time, advances in neuroscience and brain diagnostics encouraged numerous academics to have AI emulate human cognition and the brain. The ease of basic programming compared to the gargantuan task of emulating the human mind however, created somewhat of a plateau in AI research because it became quickly clear that basic algorithmic coding would have to morph into something more complex. "AI research, like all science research will advance in spurts," Jeffrey Epstein commented, whose foundation supports many eminent and Nobel scientists around the world, including Marvin Minsky's AI Lab at MIT. "Linear coding will exhaust itself, if it hasn't already. Someone will create an entirely new virtual platform to emulate the mind, and that will launch a new generation of AI discovery."

Indeed, over the last decade, AI scientists have been pushing the boundaries of linear algorithms, creating virtual software platforms that embody associative, dissociative, memory, basic survival needs and a host of other variables that effect pathway reactions. And while many AI scientists aim to encapsulate the human brain, it's not the Holy Grail for all AI research. For some, AI research stands as a provocative tool to explore and better understand human cognition. And not just that, but to find and unleash new cognitive capability.

There is of course, an increasingly blurred line between purely mechanical AI, and OI, organic intelligence. On one end of the spectrum, there's the computer, robot, cell phone and microwave and on the other, the human being, animal, plant or organic cell. But between the two spectrums, there's a growing fusion: the development of nano-technology and implanted micro-machines for example, alleviating pain, vascular plaque, pacing the heart, regulating brainwaves and targeting cells; or the implementation of modified genes expressing desired traits. But if we're on track to creating the first generation of borgs, where both intelligences can serve each other,

there's no doubt that it will catapult us towards some kind of cognitive unknown; a cerebral land of Oz.

Today, Jeffrey Epstein AI sponsors many leading scientists at the forefront of AI research, including Marvin Minsky and Seth Lloyd at MIT, Ben Geortzel in Hong Kong, David Hanson of Hanson Robotics in California and Joscha Bach in Berlin. Jeffrey Epstein AI also backs key foundations in Artificial Intelligence, including the OpenCog Foundation and Humanity +.

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Jeffrey Epstein AI Projects

There's a lot of info here so probably best to present this page as a list of links with a two line caption below each one.

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Marvin Minsky and MIT's AI and Media Labs

Jeffrey Epstein AI has played a key role in furthering AI research at MIT's Artificial Intelligence labs. The labs are still overseen by the eminent AI cognitive scientist, Marvin Minsky and stand at the forefront of AI cognitive and neural research.

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Marvin Minsky

Professor Marvin Minsky is one of the most established cognitive scientists in the field of Artificial Intelligence and the co-founder of MIT's AI laboratory. He is the recipient of numerous awards including the Turing Prize, the Japan Prize and the author of numerous books and publications on Artificial Intelligence. In 1951, Minsky built the first randomly wired neural network learning machine called, SNARC. In 1957, he invented the first confocal microscope (the precursor to the widely used laser confocal microscope today). In 1963, he invented the first head-mounted graphical display.

Minsky's pivotal books include: *Perceptrons,* a foundational work in the analysis of artificial neural networks, "*A Framework for Representing Knowledge*" which created a new paradigm in programming and *The Society of Mind*, the theory that intelligence could be a product of the interaction of non-intelligent parts. *The Emotion Machine,* published in 2006, critiques popular theories of how the human mind works and suggests alternative and more theories.

MIT AI Lab and Media Lab

The MIT Media Lab focuses on computer and AI technology research that is at the cutting edge, outside of mainstream study. The lab covers such areas as wearable computing, tangible interfaces, and affective computing. Faculty, staff and students work in more than 25 research groups on more than 350 projects ranging from digital approaches for treating neurological disorders, to a stackable, electric car for sustainable cities, to advanced imaging technologies that can see around a corner. The Lab operates on a $45 million budget and currently has 80 active members.

The MIT Computer Science and AI Lab, known as CSAIL, is the largest research laboratory at MIT and one of the world's most important centers for information technology research. The building is designed by Frank Gehry, has more than 100 senior research scientists and faculty members, over 40 postdoctoral fellows and associates, 350 graduate students and 50 undergraduates. Over the years, CSAIL and its members have been instrumental in developments such as time-sharing, massively parallel computers, public key encryption, the commercialization of robots, and much of the technology underlying the ARPANet, Internet and the World Wide Web. To date, CSAIL members have started over 100 companies, including 3Com, Lotus Development Corporation, RSA Data Security, Akamai, iRobot, Meraki, ITA Software and Vertica. CSAIL is also home to the World Wide Web Consortium (W3C), directed by Tim Berners-Lee, inventor of the Web and a CSAIL member.

Under the direction of Professor Daniela Rus, CSAIL members conduct research in practically all areas of information technology, including artificial intelligence, the theory of computation, systems, machine learning and computer graphics. Presently in focus are projects that tackle the hurdles of big data, creating new models for wireless and mobile systems, software protection and developing a new generation of robotics.

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Ben Goertzel and OpenCog

Jeffrey Epstein AI continues to fund research at the OpenCog Foundation based in Hong Kong. Headed by prominent AI scientist, Ben Goertzel, OpenCog, is both an open software programming company and a foundation for artificial intelligence scientists. OpenCog's software products offers unique programming language for all AI scientists to use and share. As such, it provides a pivotal tool in unifying and accelerating AI research around the world.

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Ben Goertzel

Ben Goertzel is the Chief Scientist of the financial prediction firm Aidyia Holdings. He is Chairman of the AI software company Novamente LLC, the bioinformatics company Biomind LLC, which provides advanced AI for bioinformatic data analysis (notably microarray and SNP data); Chairman of the Artificial General Intelligence Society and the OpenCog Foundation. He is also Vice Chairman of the futurist nonprofit Humanity+ organization and magazine. Goertzel is general Chair of the Artificial General Intelligence conference series and advisor to the Machine Intelligence Research Institute (formerly the Singularity Institute).

OpenCog Foundation

Based in Hong Kong and funded in part by the Hong Kong government, OpenCog's main mission is to not only emulate the circuits of human intelligence in a machine but to explore beyond human intelligence and create a world of 'super' intelligence. As an open software company, OpenCog scientists share their programming with the AI community at large, hoping to accelerate and unify the field.

One of the software tools that OpenCog has developed is called OpenCogPrime. OpenCogPrime programs a wide range of projects including simple virtual agents in virtual worlds. It is also being tested to control a Nao humanoid robot. See http://novamente.net/example for some illustrative videos.

Another programming tool is OpenCog Framework, which is being used for natural language applications, both for research and by commercial corporations. OpenCog Framework provides an OS-like infrastructure, stable API's and encompasses components using C++ Templates and the Boost libraries, including:

- AtomSpace a shared library for fast in-memory knowledge representation, providing hybrid data structures to integrate and manipulate connectionist and symbolic knowledge.
- CogServer a container and scheduler for plug-in cognitive algorithms.

Various OpenCog projects currently using OpenCog Framework include:

- Cognitive algorithm plug-ins MOSES, PLN and others.
- Interfaces and proxies, e.g. CogBot an interface to OpenSim
- An integrated natural language processing pipeline, together with its stand-alone but closely coupled projects, e.g. RelEx and Link Grammar
- Embodiment containing the code to connect OC to virtual worlds and implementing a virtual pet and humanoid agent

"One of the best ways to speed up scientific research, is to facilitate communication," Jeffrey Epstein pointed out, whose own foundation organizes and funds science conferences. "The first step in communication is to have everyone speaking the same language. To this end, OpenCog's programming is an essential tool for the AI community."

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HUMANITY +

Humanity + is a non-profit foundation which advances the ethical use of technology to expand human progress. The organization has more than 6,000 members from more than 100 countries.

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Humanity +

Humanity + is an international non-profit foundation with more than two dozen chapters around the world. Advancing ethical and responsible technology to further human progress is at the core of its mission.

Humanity + has several main platforms:

Conferences: international conferences are held every year for corporations, officials and industry to review their own technology and its relationship to humanity. Recent conferences have been held in Beijing, China, San Francisco State University, Polytechnic University in Hong Kong, Parsons, The New School for Design in New York City, California Technology Institute, and Harvard University.

"Conferences facilitate collaboration," Jeffrey Epstein remarked. Humanity +'s conferences are intimate, so that members can really meet." Jeffrey Epstein own foundation has organized several pivotal conferences over the last decade, including a group of Nobel scientists to discuss the consensus on gravity, another to address global threats to the earth and another on the origins of language.

H+ Magazine: Humanity +'s monthly magazine covers technological, scientific, and cultural trends that are changing humans in fundamental ways. H+ Magazine also focuses on some of the most revolutionary inventions that are quickly merging the realms of science fiction and daily life. Humanity + Magazine provides a powerful platform for AI and technology scientists to share their vision and work with the larger community.

H+ Virtual Edu TV: is a newly launched television series which discusses provocative questions about emerging and speculative technologies and their socio-cultural role in our lives. The series is located at teleXLR8.

H+ Student Network: is a rapidly growing international student network devoted to discussing and furthering trans-humanist ideas. The H+SN provides opportunities for university-level work and research in exploring the promises and perils of technology and the future of humanity.

Humanity + Press: is Humanity +'s publishing division. Founded in 2010, H+ Press publishes books and other works to promote collaboration between technology and humanist values.

Recent publications include: *A Cosmist Manifesto*, by Ben Goertzel and *H+ Summit Harvard 2010*, a collection of abstracts from the corresponding conference

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Joscha Bach and MicroPsi

Cognitive Artificial Intelligence has classically been the study of emulating cognitive behavior in machines. Dr. Joscha Bach and his programming organization, the MicroPsi 2 Project however, aim to achieve the reverse: not to translate cognition into AI, but to see what AI can reveal about cognition.

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Joscha Bach and MicroPsi 2

Based in Berlin, Germany, cognitive AI scientist Dr. Joscha Bach has been a professor, cognitive researcher and software entrepreneur at Humboldt University in Berlin. He is also the author of Principles of Synthetic Intelligence (Oxford University Press).

Cognitive Artificial Intelligence has classically been the study of emulating cognitive behavior in machines. Dr. Joscha Bach and his programming organization, the MicroPsi 2 Project however, aim to achieve the reverse: not to translate cognition into AI, but to see what AI can reveal about cognition.

Specifically, MicroPsi Project is a series of software programs that strives to create emotionally driven agents in a virtual computer platform. To achieve this, MicroPsi programmed three types of basic survival needs or drives into the characters: physiological (i.e., hunger), social (i.e., affiliation needs), and cognitive (i.e., reduction of uncertainty and expression of competency). So that when the agents receive and process information, these three emotional drives either get depleted or filled, influencing goal formation, knowledge selection and application. The resulting architecture generates new kinds of pathway behaviors, including context dependent memories, socially motivated behavior, and internally motivated task switching.

This emotion driven architecture also includes several knowledge trait templates: temporal structures, spatial memories, and new information processing mechanisms and behaviors,

including progress through types of knowledge sources when problem solving (known as the Rasmussen ladder), and knowledge-based hierarchical active vision.

The results of all this complex architecture are visually displayed on a computer screen in a simulated tropical island. But what might look like a simple video game is actually a platform for highly complex emotionally driven agents to move around in.

The first MicroPsi Project built between 2003 and 2009, has more than 60,000 lines of Java code with plugins for Eclipse IDE. MicroPsi 2 is written in Python; and unlike standard code, Python uses graphical and spatial definitions for its characters. The graphical format allows for more precise associations, conceptual hierarchies, pathway activation spreading, perceptual schemata and parallelism.

"The use of a virtual platform to explore human cognition provides optimal flexibility," Jeffrey Epstein asserted. "Scientists can avoid the expensive and complicated logistics of robotics."

Bach doesn't see the MicroPsi 2 Project as being anywhere near a valid cognitive model but rather as an evolving effort towards a unified theory of cognition.

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MEDIA page

Jeffrey Epstein AI Media

Jeffrey Epstein Launches Radical Emotional Software
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Forbes

Jeffrey Epstein Launches First Humanoids in Berlin
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Huffington Post

Jeffrey Epstein AI Helps Launch Artificial Intelligence in Ethiopia (hyperlink to
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artificial-intelligence-in-ethiopia.html)
The Street

Jeffrey Epstein Funds Free Thinking Robots (hyperlink to:
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Digital Journal

BLOG page

The Jeffrey Epstein VI Foundation Blog

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EVENTS PAGE

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