Co-Evolving Robots At Brandeis

Posted by timothy on Thursday May 11, @05:43PM
from the nutty-nutty-neato-nutty dept.

neck jones pointed out this site titled "Towards Fully Automated Design of Real Robots" at the Brandeis Dynamic & Evolutionary Machine Organization Lab which dropped my jaw. As neck says: *"Whoah."* Anyone who can summarize their work by beginning "Start with a set of simple bodies and set of random brains" and go on to describe automated, automatic fused depositon manufacturing already has my attention.

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Related Links

- neck jones
- Towards Fully Automated Design of Real Robots
- Dynamic & Evolutionary Machine Organization Lab
- More on Technology
- Also by timothy

This discussion has been archived. No new comments can be posted.

Automated whose-it what's? (Score:5, Funny)
by tcd004 **(tdaub@ceip.org)** on Thursday May 11, @05:48PM EDT (#1)
(User Info) http://www.lostbrain.com

This will be really cool till Linda Hamilton crushes it in a hydraulic press.

tcd004

Here's my Microsoft parody, where's yours?
LostBrain

Re:Automated whose-it what's? (Score:1)
by Chiasmus_ **(jcornell@scs.unr.edu)** on Thursday May 11, @06:38PM EDT (#39)
(User Info)

This is the worst ./ discussion ever.
At the point that I'm posting this, the topic has been up for almost an hour, there are 36 comments, and the only one moderated above +1 is the **first post**!

People! Does no one care about giant killer robots?

"Gentlemen, mark your opponents, fire into your own ranks." - R.E.M.

Re:Automated whose-it what's? (Score:1)
by gentle_giant on Thursday May 11, @06:45PM EDT (#44)
(User Info) Hello! My name is Bingo, I like to climb on things! Can I have a banana? Eeg-eek!

Oh, I care alot about giant killer robots. A lot. Especially if they're trying to eat me. Yeah, definitely worth consideration. And running! Ahhhh!!!
What is the resolution of YOUR photographic memory?

Really Cool! (Score:3, Interesting)
by Utoxin **(walkerdesign@crosswinds.net)** on Thursday May 11, @05:55PM EDT (#10)
(User Info) http://www.crosswinds.net/~walkerdesign/

This kind of stuff is what really gets me excited. Imagine the potential of this stuff if we sent a small set of evolving robots to a distant planet. They could have a database containing information on how to build various types of robots, and also, for eventual use, information on how to create humans, using a digital copy of human DNA, or frozen fertilized eggs.

Imagine it... Robots being used to help us colonize other worlds. Is that not /cool/?
--
Matthew Walker
My DNA is Y2K compliant
Visit KeltiaMUSH: http://mush.otaking.org/~keltia/keltia.html

Re:Really Cool! (Score:3, Insightful)
by gentle_giant on Thursday May 11, @06:51PM EDT (#47)
(User Info) Hello! My name is Bingo, I like to climb on things! Can I have a banana? Eeg-eek!

Yeah, sending robots to a distant far-away planet with frozen fertilized eggs would be cool, but what if it worked? Would it really ensure the survival of our civilization? Or would these new humans be a totally different race because they had no cultural ties whatsoever to us? Would they just die from depression because they had no older human to care for them, teach them, etc.? And what is more important to us: the survival of our species or the survival of our civilation (art, literature, way of life, etc.). There is so much we don't know about ourselves that it would be silly and perhaps even cruel to send unborn members of our civilization on such a mission. I mean, if you were one of these babies, wouldn't you ask yourself, "Why did they send me? Didn't they want me back on Earth with them?" Just a few thoughts on the topic.
What is the resolution of YOUR photographic memory?

Re:Really Cool! (Score:1)
by Utoxin **(walkerdesign@crosswinds.net)** on Thursday May 11, @07:28PM EDT (#54)
(User Info) http://www.crosswinds.net/~walkerdesign/

You have some very good points here, and it's one of the only things I don't have an answer too. The best thing I've thought of is that maybe by then we'll have some kind of 'ansible', so we'll have instantaneous communication over long distances. This would enable us to maintain contact with said colonists.

Also by this point, we may be able to develop human-realistic robots with advanced enough brains to care for the maturing children with some degree of success.

An ansible would also allow them to have contact with our culture, and to feel a sense of connection with the rest of the human race.
--
Matthew Walker
My DNA is Y2K compliant
Visit KeltiaMUSH: http://mush.otaking.org/~keltia/keltia.html

The Physics of Immortality (Score:1)
by uninerd on Thursday May 11, @11:20PM EDT (#66)
(User Info)

In Tippler's book, he proclaims that the robots *become* the center stage; that is- (backing up the train of thought)
Frank J Tippler, in The Physics of Immortality says that before we send out autonomous robots they will need to be able to pass the Turning Test if they are going to be versatile enough to deal with their unpredictable environment as successfully as a manned mission to the same place.
Later he goes on to say that these robots will soon evolve past our level and take over the universe. To him, this seems to be the first step to the realization of his "omega point" theory... but to me it seems like something else entirely. Fully self-sufficient and reproducing robots- could that be easily considered a new form of life? I see where you are coming from- the problems of raising a human being in a test tube... but what it boils down to- I don't think that they would be a human being. Not emotionally, and probably not on a cognitive level... but why would this robot in a new world want to mess around with biochemistry? Utterly pointless! I'm with Tippler on the coolness of creating these robots- and the possibility of them being a higher form of life. Hmm, controversial? I hope so!

Re:The Physics of Immortality (Score:1)
by jellybear on Sunday May 14, @04:09PM EDT (#88)
(User Info)

Actually, the robots might want to create biological life because there are certain conditions under which carbon-based life may be more appropriate (e.g. perhaps they find a planet with abundant supplies of carbon, but very little silicon?) As, well, who's to say robots won't enjoy the "coolness" of a carbon-based cat or dog, the way we enjoy Aibo's coolness. Finally, the "omega-point", as Tippler terms it, seems to me to represent a transcendence of species, races, etc. Intelligence becomes a meta-life that is capable of manifesting itself as machine, flesh, or virtual entity, depending on the situation.

Re:Really Cool! (Score:1)
by Sleen **(jonathan@planet-neptune.com)** on Thursday May 11, @07:54PM EDT (#56)
(User Info) http://www.jonathanleonard.com

That optimism is only valid until we meet an alien race. Then you never know whats goin on out there. You would have to assign a human emmissary to accompany the droids.
"The pigs don't like it when you touch their smoke" -CPIII, FZ

Re:Really Cool! (Score:1)
by jafac on Thursday May 11, @06:13PM EDT (#26)
(User Info)

. . . until halfway there, they decide it's not worth it, and Earth would be a much nicer planet to take over.

I just remembered this old Metallica song. . .
-OOPS! time to cut Lars another check!

Makes you think... (Score:2, Insightful)
by c=sixty4 **(armalyte@hotmail.com)** on Thursday May 11, @05:55PM EDT (#11)
(User Info) http://hawknest.stacken.kth.se

Wasn't this exactly the sort of thing Bill Joy was warning against? "Beware the dawn of the Metal Age!"

Seriously, I'm a bit skeptical to the idea of construction by essentially throwing dice.

"Come on world, pull my finger!" --- Mike Nelson, MST3K episode 812

Re:Makes you think... (Score:2)
by chialea **(chialea@hotmail.com)** on Thursday May 11, @10:43PM EDT (#60)
(User Info) http://www.nanorobotics.org/

well, I worked next to their lab a few years ago (and one of my friends worked in the lab, but hung out in mine -- more room) and they were working on this sort of thing then. and I have to say, I've never seen anything even vaguely pretty come out of this, but what comes out does fit the specs. the lego cranes can really lift the load, the little running guys stop running into things, whatever.

when you start going automated, you get stuff which is ugly, if you don't specifically program esthetics in there. you get things that are inefficent, if you don't specifically program efficency in. you get things which are just amazingly silly, if you don't do your limiting conditions (or your math!) quite right. this will give you exactly what you ask for. right now it's "just" a matter of learning how to specify things, and more effecient ways to "breed" them and prune out the tree. an interesting technology to be sure...

Lea

Re:Makes you think... (Score:1)
by ItalianScallion on Friday May 12, @01:49AM EDT (#73)
(User Info)

> >Seriously, I'm a bit skeptical to the idea of construction by essentially throwing dice.

engineering time on earth/evolution time on earth = basically, 0.

and you are skeptical?

Re:Makes you think... (Score:1)
by isaac_akira on Friday May 12, @08:35PM EDT (#83)
(User Info)

engineering time on earth/evolution time on earth = basically, 0.

But doesn't that just show you how much more effective engineering time is than dice throwing time? Look at how much new and useful STUFF has appeared on the earth in these last few hundred years. Incredibly complex machines and global systems (the Internet?) have sprung up within one human generation, and within only a few (<20) machine generations (286->386->486->Pentium->etc.).

I still think evolving technology is cool though, and I'm sure that *engineers* will put it to great use.

- Isaac =)

Re:Makes you think... (Score:1)
by HenrysCat on Friday May 12, @07:21AM EDT (#75)
(User Info)

>> Seriously, I'm a bit skeptical to the idea of construction by essentially throwing dice.
Hmmm, construction by essentially throwing dice reminds me of the process used to build one of the most complex machines on earth. Humans (or mice depending on your point of view)

Cool step in Robot evolution! (Score:3, Informative)
by MAXOMENOS **(maxomenos@SPAM=DEATH.mindspring.com)** on Thursday May 11, @05:57PM EDT (#14)
(User Info) file:///dev/null

This work out of Brandeis is an implementation of the thought-experiment done by Valentino Braitenberg in chapter 5 his book Vehicles, which outlines experiments in evolution of simple robots. The main differences between the Brandeis work and Braitenberg's experiment are that the robots are being constructed to particular practical ends and most of them are simulated before they are built. Damn. Wow. Well done!

The Second Amendment Sisters
Because a million moms CAN be wrong!

Domo Arigato (Score:2, Funny)
by Anonymous Coward on Thursday May 11, @06:01PM EDT (#17)

Domo Arigato, Mr. Roboto
Mata ah-oo Hima de
Domo Arigato, Mr. Roboto
Himitsu wo Shiri Tai

You're wondering who I am - Machine or mannequin
With parts made in Japan, I am the modren man.

I've got a secret, I've been hiding
Under my skin.
My heart is humn, my blood is boiling
My brain IBM.
So if you see me, acting strangely
Don't be surprised.
I'm just a man who, needed someone
And somewhere to hide
To keep me alive - Just keep me alive.
Somewhere to hide to keep me alive.

I'm not a robot, without emotion
I'm not what you see.
I've come to help you, with your problems
So we can be free.
I'm not a hero, I'm not a saviour
Forget what you know.
I'm just a man whose, circustances
Went beyond his control - beyond my control.
Beyond my control, we all need control.

I am the modren man, who hides behind a mask
So no one else can see, my true identity

Domo Arigato, Mr. Roboto, Domo (Domo), Domo (Domo)

Domo Arigato, Mr. Roboto, Domo (Domo), Domo (Domo)

Domo Arigato, Mr. Roboto [Repeat several X's]

Thank you very much, Mr. Roboto for doing the jobs that nobody wants to
And thank you very much, Mr. Roboto for helping me escape just when I needed to

Thank you - Thank you. Thank you.
I want to thank you, please thank you.

Oh! Oh-ah-oh!

The problem's plain to see
To much technology
Machine's to save our lives
Machines dehumanize

The time has come at last.
To throw away this mask.
Now everyone can see.
My true identity.

I'm Kilroy!
Kilroy!
Kilroy!
Kilroy.

Other related stuff of interest. (Score:4, Informative)
by Matt2000 **(matt@KILLTHIS.hotnutz.com)** on Thursday May 11, @06:03PM EDT (#18)
(User Info) http://www.hotnutz.com

This type of work is definately interesting and has produced some good results. If you are interested, definately check out the references at the bottom of the page, they are some of the defining work in this area. For your convenience I've linked up a few here (for some reason they're not linked from the actual site):

Karl Sims stuff

His Original Paper
Some cool pictures and more links

That should get you started.

Hotnutz.com - Funny
Intergalactics - Realtime Strategy

Hmm.. (Score:2)
by technos **(technos@crosswinds.spam.net)** on Thursday May 11, @06:03PM EDT (#19)
(User Info) http://www.crosswinds.net/~technos/

1. Introduce the idea of survival through predation.
2. Add some virtual physics.
3. Slap the simulation in the world's biggest cluster.

4. Sit back and see how long it takes the simulation to nuke itself!!

Now seriously.. All this amounts to is simple expansion of neural net evolution technique... We're still limited by the brains we can give the little virtual monsters..
Watch this space!

distributed.net (Score:1)
by CAPSLOCK2000 on Thursday May 11, @06:12PM EDT (#25)
(User Info)

Anyone willing to write a distributed.net client & server for this. Downloading new robots seems to be much more fun than donwloading packets.
-- Why doesn't anybody care about last posts?

Re:Hmm.. (Score:2)
by technos **(technos@crosswinds.spam.net)** on Saturday May 13, @12:09AM EDT (#85)
(User Info) http://www.crosswinds.net/~technos/

They are certainly allowed to evolve! Unfortunatly, there are a set of well-known linits (I suppose) that govern how far a net can evolve.

It's not the machines, it's the huumans that designed them.. We're simply not smart enough to create a neural net capable of evolving past a certain point... The net stagnates on a set of variations and refuses to move..

I'm not an expert by any means, so any further explaination should be left to others.. . .
Watch this space!

Hrrm... (Score:2, Funny)
by Signal 11 **(signal11@mediaone.net?Subject=Slashdot comment)** on Thursday May 11, @06:10PM EDT (#23)
(User Info) http://www.malign.net/~bojay/

Sounds like they've managed to duplicate the intelligence of an average AOLer. What an advance in artificial stupidity - I'm impressed!

-o Disclaimer: My employer doesn't even agree with me about C indentation style. o-

Don't moderate Signal 11 down! (Score:2, Funny)
by Anonymous Coward on Thursday May 11, @06:18PM EDT (#28)

Signal 11 is really a 98 year old deaf and blind black woman who lives in a geriatric home in Kansas. Slashdot is everything she's got, so please go easy on her.

Try it yourself (Score:4, Interesting)
by chuck **(homic@earthling.net)** on Thursday May 11, @06:18PM EDT (#27)
(User Info) http://www.wpi.edu/~homic

The whole simulation of robots angle reminded me of this site: http://sodaplay.com/.

It's a java applet where you can design some silly little robots in 2-D, and see how you can make 'em work. No neural networks, or real-world synthesis, but hey, it's cool!

Rudy Rucker (Score:2, Informative)
by Fool@Work on Thursday May 11, @06:23PM EDT (#30)
(User Info) http://inanna.starseed.com/~erik/

This looks very similar to ideas found in Rudy Rucker's fiction. Those interested in some good, entertaining science fiction type stuff might want to check out his books, especially *Software* and *Wetware*. I'd almost call his books "cyberpunk", but they aren't dark and gloomy.

Fool@Work

Re:Rudy Rucker (Score:1)
by albamuth on Thursday May 11, @06:41PM EDT (#40)
(User Info) http://www.piratemotel.org

Hell yeah!

Software/Wetware is/are (a) very good read(s). He has another novel, *The Hacker and the Ants* which is less futuristic, though still pretty good.

I appreciated the idea that the robots (in *Software/Wetware*) were not truly sentient until they had broken their "Asimov" programming (Asimov's famous 3 Laws of Robotics), and that they had a highly developed philosophy about the nature of the universe (somewhat postmodernist).

$ chmod 666 soul.tar.Z

Very cool (Score:2)
by sbeitzel on Thursday May 11, @06:24PM EDT (#31)
(User Info) http://www.pobox.com/~sbeitzel

I want **way** more detail on the "printing" process. Man. That looks really cool. I think it'd be awesome to be able to take an arbitrary 3-D model and "print" it as a fully-detailed plastic model.

Re:Very cool (Score:2, Interesting)
by GossG **(gossg@mindlink.com)** on Thursday May 11, @06:34PM EDT (#35)
(User Info)

I didn't read the article, but what you describe is available. You start with a tank of clear liquid polymer waiting for (visual? UV?) light to cure it. You shine lasers on it from various directions, and where the lasers intersect, there is enough energy to cure the plastic at that point.

I believe I saw a TLC show where they were "printing" a 3-D lifesize HOLLOW model of a guy's skull based on a CAT scan, so that the surgeon could plan his operation around landmarks on the INSIDE of the skull.

Rapid Prototyping (ex Re:Very cool) (Score:1)
by Chep **(chep@donjon)** on Thursday May 11, @06:37PM EDT (#37)
(User Info) http://www.crans.ens-cachan.fr/~chepelov

Have a look at stereolithography and other rapid prototyping processes ! This kind of technology has been out for ages (still a bit too expensive ; I wanted to have the technical high school I work for, buy one, so that at least *some* CAD exercises could be made matter), and still evolves very very very rapidly. Attend any big CAD trade show in your area, you'll probably see some RP in action..

Though it's quite imperfect, have a look at http://www.machpro.fr (also in English) for some links & contacts on RP hardware providers (and many other processes, by the way).

Re:Rapid Prototyping (ex Re:Very cool) (Score:1)
by Chep **(chep@donjon)** on Thursday May 11, @06:38PM EDT (#38)
(User Info) http://www.crans.ens-cachan.fr/~chepelov

(a reply to self)

better link : <a
href="http://www.machpro.fr/cfao/cfao_j.htm">http://www.machpro.fr/cfao/cfao_j.htm

Re:Rapid Prototyping (ex Re:Very cool) (Score:2, Informative)
by Chep **(chep@donjon)** on Thursday May 11, @06:41PM EDT (#41)
(User Info) http://www.crans.ens-cachan.fr/~chepelov

Or even better :
http://www.machpro.fr/machines/proto/default.htm

(former link was on CAD systems with the required "drivers", not the machines themselves)

sorry there aren't much pictures there, but at least you have entry points to look further on the web.

Shorter Summary Available (Score:2, Informative)
by grnarrow on Thursday May 11, @06:33PM EDT (#34)
(User Info) http://www.bottomquark.com

If anyone wants to read a shorter, less technical summary of the work, the current issue of New Scientist has this brief article available.

It certainly sounds like an interesting frontier, but I wonder if it will ever really be practical.

grnarrow
www.bottomquark.com

Re:Shorter Summary Available (Score:1)
by albamuth on Thursday May 11, @06:51PM EDT (#46)
(User Info) http://www.piratemotel.org

It sure is less technical:

...but the aim is to make the robots totally independent, much like the vengeful shape-shifter in Terminator 2.

Genetic algorithms are a cheap way of doing things. An intelligent mind can see forward to say, "in order to do this I need to first make so-and-so" wheras a genetic algorithm could wind up taking thousands of generations to get anywhere. However, if all those generations are first simulated on the computer (and very rapidly with a large population) then evolution can be achieved quickly.

If someone can figure out a way of doing this with distributed computing (ala SETI@home)...well the possibilities are great.

$ chmod 666 soul.tar.Z

U of D Spring Lecture Series (Score:5, Interesting)
by Life Blood **(lionNOhart@SPudel.AMedu)** on Thursday May 11, @06:45PM EDT (#43)
(User Info) http://www.me.udel.edu/~acheson/

I'm a Univ of Delaware Mech Engineering grad student and we had a talk on this from a related researcher earlier this year. It has some cool potential in a lot of areas, but also some strong disadvantages.

Basically a modular robot is cool in that it can adapt to situtations, have redundacy in case a module fails, etc. Makes for a great exploration units.

The main problem with them is that they're a bitch to control. The processing demands rise with the square of the number of modules, so they get sluggish pretty darn fast. They also are more inefficient than a committed robot and can have problems with local weaknesses. Basically a bad configuration can easily overload one module and cause failure of the whole robot. Preventing that takes even more processor time to test possible configurations, creating a wicked cycle.

This post is stupid and should definitely not be moderated up... *Maybe a little reverse psychology will work...*

Re:U of D Spring Lecture Series (Score:2)
by chialea **(chialea@hotmail.com)** on Thursday May 11, @11:11PM EDT (#65)
(User Info) http://www.nanorobotics.org/

ok, here goes the second try, since this didn't seem to post before, for whatever reason (even though I got the confirmation screen!). hmm. bug?

in any case, I was asking whether that was Dr. Agrawal who gave that talk. my guess is that it was, since he worked at PARC last summer on PolyBot, and that seems to be what you're referring to (say hi to him from me, if you see him, if you would)

this is different than modular robotics is a few ways. this is "evolving" robots for one specific task. controlling them (in general) won't take nearly as much processing power, since it's controlling itself in a functioning (and efficient, if you select for that) way with an evolved brain. modular reconfigurable robots take so much processing power if you control them in an extremely general fashion, because they're so flexible. one robot, infinite tasks and infinite ways to accomplish it. TMTOWTDI^n, really.

I have to agree -- they're really a BIG pain to control, because of force constraints, shattering acrylic, and such (a lot of this is fixed by new hardware). it basically involves a very large amount of experimentation and tweaking, at least the way I end up doing it. :) it's a very interesting controls problem to do this in general, and perhaps the DEMO lab's techniques could be applied here. I don't believe there was any work in this area done on PolyBot, but it could have interesting results.

Lea

Re:U of D Spring Lecture Series (Score:1)
by Life Blood **(lionNOhart@SPudel.AMedu)** on Friday May 12, @09:48AM EDT (#81)
(User Info) http://www.me.udel.edu/~acheson/

It was one of the visiting professors for the spring seminar series, Mark Yim from Xerox PARC.

This post is stupid and should definitely not be moderated up... *Maybe a little reverse psychology will work...*

Re:U of D Spring Lecture Series (Score:1)
by chialea **(chialea@hotmail.com)** on Friday May 12, @02:46PM EDT (#82)
(User Info) http://www.nanorobotics.org/

ah. I guessed wrong :)

btw, Mark isn't a professor, he's a researcher (since PARC wasn't an academic institution when last I checked -- though it seems awfully like it)...

I still think the concepts behind them are completely different, though...

Lea

Re:U of D Spring Lecture Series (Score:1)
by Life Blood **(lionNOhart@SPudel.AMedu)** on Sunday May 14, @09:45PM EDT (#89)
(User Info) http://www.me.udel.edu/~acheson/

Yeah prolly, the link was down when I tried to see the page. (Darn slashdot effect) I was just talking about something that sounded similar due to the description that was given in the post. Sorry for inducing confusion.

This post is stupid and should definitely not be moderated up... *Maybe a little reverse psychology will work...*

Re:U of D Spring Lecture Series (Score:1)
by chialea **(chialea@hotmail.com)** on Monday May 15, @01:11AM EDT (#90)
(User Info) http://www.nanorobotics.org/

hey, I think they're both interesting, no prob here :)

Lea

Okay, this one deservs a big WOW! (Score:3, Interesting)
by Effendi13 **(arhodes@openave.com)** on Thursday May 11, @06:50PM EDT (#45)
(User Info)

Besides the program's innate ability to recreate star constallations, I do have to say this is interesting. The whole concept may even lend proof to evolution in a very simplistic way. If we gave a brain to a peice of silly putty and let it run around, would it eventually be a lizard or a snake? If we put it in water, would it become a fish? It is even becoming appearent that thoughts and decisions could effect evolution, wouldn't you say? If we program the peice of silly putty in water that the faster it swam, the better, and it randomly changed parts of it's body, when it becomes faster, it locks a change until another change makes it faster... well, you could actually write a program to simulate evolution. Hmm.. just a muse I guess, but doesn't it make animals look simple?
-Effendi
-Effendi

Re:Okay, this one deservs a big WOW! (Score:1)
by albamuth on Thursday May 11, @06:58PM EDT (#49)
(User Info) http://www.piratemotel.org

it locks a change until another change makes it faster...

That's not quite how evolution works. There is such a thing as **neutral drift** that occurs when a change in a species does not affect it's survivability either way. However, later mutations that spring out of that neutral drift may greatly affect fecundity for the better.

For example, imagine if a couple yuppies started wearing black skintight vinyl pants and tried to look like rockstars. Suddenly I go around killing everyone wearing khakis and the more fit yuppies survive to evolve into sloth-like barflies.

$ chmod 666 soul.tar.Z

My own personal experience with co-evolution (Score:1, Funny)
by Anonymous Coward on Thursday May 11, @07:06PM EDT (#50)

I've been co-evolving Visual Basic scripts and Virtual Windows users for a while now. For fun, the fitness metric for VBscripts has been the number of copies that would thrive in a virtual network environment. It wasn't perfect (got stuff like "I hate go to school"), but the results were pretty interesting overall. I guess I just want to warn the fine people at Brandeis not to let their experiment break loose. Not that it happened to me, but you know, people should be careful with these things.

Re:My own personal experience with co-evolution (Score:2)
by technos **(technos@crosswinds.spam.net)** on Thursday May 11, @07:23PM EDT (#53)
(User Info) http://www.crosswinds.net/~technos/

I'm laughing my ass off, but apparently no one else took the time to peek inside ILUVYOU.txt.vbs..
Watch this space!

For Those who fear "The Matrix AI" (Score:3, Insightful)
by Dolio on Thursday May 11, @07:19PM EDT (#52)
(User Info) http://dolio.pionet.net

As we all know in the movie The Matrix, AI somehow came to destroy humanity. This is what many of us fear AI will become. I'de like to point out that we usuaily get out of technology what we put into it. If you are Micro$oft, you put crap into your os, you get crap out of your os. If we design AI as a weapon, I have **NO DOUBT** that AI will destroy us. So, I believe we should take great care to avoid creating destructive systems, but rather systems that are friendly. Construction systems like the NASAs robot snakes, automotive safety systems, explorers, harvesters, educational systems, and such.

AI devices need not be concerned with power or money of world dominance.

And I don't believe Microsoft is Evil,
if only they cared about their customers,
like that care about their stockholders.

$0.02 - Please overlook my spelling and gramatical errors... you get the idea i think.

Peace
L8r
Dolio

Re:For Those who fear "The Matrix AI" (Score:2, Interesting)
by The Evil Beaver **(evilbeaver@NOSPAMlogiclrd.cx)** on Thursday May 11, @10:29PM EDT (#59)
(User Info) http://blaklight.tekscode.com/

If Microsoft made robots with AI for the US Military, to replace each and every soldier, the United States would be taken over by Cuba. Think about it, these robo-soldiers would at random reboot.
The story of the future in both The Matrix and Terminator (both of them) has robots who have taken over the world. Starsiege and Terminator have master brain robots that made sure they wouldn't be unplugged.
It's only natural that one day, the world governments, if not stopped, will start using robot soldiers with AI. And if they build a superintellegent master machine with better AI than anything else, we are doomed. I agree with robot soldiers, BUT it must be every bot for itself.
BTW, it would be interesting to design machines that evolve. Four components - Body, brain, mine (to get raw materials), and factory (to convert materials into energy and add/repair to bot).

When the pack animals stampede, it's time to soak the ground with blood to save the world.
We fight, we die, we break our cursed bonds.

is it just me... (Score:1)
by m@ltese on Thursday May 11, @11:03PM EDT (#63)
(User Info)

...or does this graphic come straight out of the old 3d car game spectre?

http://www.demo.cs.brandeis.edu/golem/simulator/collision.jpg

Karl Simms did this in 1991 (Score:2, Informative)
by chrismckinstry on Friday May 12, @12:56AM EDT (#70)
(User Info) http://www.mindpixel.com/chris

One of the very first things I downloaded from the web in 1994 was this mpeg file of Karl Simms' evolved swimming fish. It was a hell of a download at 10mb over 14.4Kbps, but it was worth it! I am certain this is a hardware version of Simms software project (he did it on one of those giant Thinking Machines Hypercubes that the Defense Department loves so much)

The video shocked me and changed my life. It's a wonderful video to show people that don't believe in evolution. After seeing this, you really have no IGNORE hard to remain IGNORant of the power of evolution.

I can't seem to find a copy of the paper behind this video, but it is equally shocking. Try to find it yourself, it is definately worth reading.

"Artificial Evolution for Computer Graphics", Karl Simms, Computer Graphics, Volume 25:319-328, Number 4, August 1991, SIGGRAPH'91.

I remember at the time thinking it would be great if the simulated hardware in Simms' simulation (how many Simms would a Simms Sim sim if a Simms Sim could sim?) could actually be constructed... you could evolve a robot in a machine, and only actually build it after it was perfected.

Looks like that is exactly what going to happen

-- Win a MINT copy of BYTE MAgazine Issue #1 = September 1975

Re:Karl Simms did this in 1991 (Score:1)
by Zurk **(zurk@SPAMSUCKSgeocities.com)** on Saturday May 13, @03:32PM EDT (#86)
(User Info)

agreed. that paper was brilliant.
see : http://www.genarts.com/karl/papers/siggraph91.html

Wow (Score:1)
by Tony_Cross on Friday May 12, @01:03AM EDT (#71)
(User Info)

Well...Im amazed. There are so many possibilities for this type of technology. With rapid prototyping and comptuing advances to come, we could just plunk down a central processing/production center somewhere, give it a task, and let it go.

On a side topic, it's almost reminiscent of how in rts games like C&C, endless tanks just kept pouring out of those little factories. Being able to do that in real life would be amazing.

But back to the main point. I really think this could be usefull in some upcoming space colonization missions (see the article /. just ran). Who can imagine what else can happen for these little guys. (Hell-no one knows! That's what the little guys are evolving themselves for! Oh well, Ill just go sit in a corner now.)

"*Logic merely enables one to be wrong with authority.*" - Doctor Who

Sounds Familiar? (Score:3, Funny)
by Ralph Bearpark on Friday May 12, @07:01AM EDT (#74)
(User Info)

"Start with a set of simple bodies and set of random brains"

That's a description of Slashdot, isn't it?

Regards, Ralph.

Biological Evolution (Score:1)
by Closet Case on Friday May 12, @07:53AM EDT (#76)
(User Info)

Perhaps these same techniques can be applied to biological evolution. For instance, I was reading about a month ago about people working on artificial DNA. That is, rather than the just the two base pairs of DNA, their would be three or four. This would allow for the creation of life that could synthesize entirely new types of proteins. Think of it as DNA V2.0 or Life 2.0.

So, perhaps someone will model cell functions in a computer, let them evolve, and decide what new kinds of life we should create.

I think THAT was what Bill Joy was trying to warn people about.

*****Never argue with a crazy person, people might not know the difference*****

Same old story. (Score:1)
by psychofox **(datw+slashdotatdcs.ed.ac.uk (replace at with @))** on Friday May 12, @08:17AM EDT (#77)
(User Info) http://www.donaldw.com

What they appear to have done is combine genetic algorithms with behaviour based robotics. Whilst it looks impressive, don't be expecting anything *too* impressive in the near future

1) Behaviour based robotics seeks to reproduce the behaviour of simplistic creatures such as ants and bees. The idea is to incrementally improve on behaviours these robots have, pushing them further and further up the evolutionary ladder. It seems however that there is a limit to how far this technique can go. Noone is going to magically add an all purpose "intelligence" behaviour to one of these things.

2) Genetic algorithms are powerful, but rely heavily on human tweaking to guide the process. Of course evolution is a powerful process, but the inherenet parallelism of the process in the real world, cannot be simulated effectively and on a large scale using computers. No matter how many boxes you stick together...

I guess what I am trying to say is this. AI is full of amazing little tricks and techniques. They just don't impress me anymore.

long way to go ... (Score:1)
by Megasphaera Elsdenii on Friday May 12, @09:03AM EDT (#78)
(User Info)

Very cool indeed; as a matter of fact, I had exactly the same idea (co-evolving in a simulator) after reading the recent snakebot stuff. If even I can have such an idea, why wasn't this tried earlier. The next thing to do is to evolve locomotion for snakebots, along the same lines.

But it is a long way to achieve the capabilities of even the lowly nematode, let alone ant or cat!
(and mind you, this is just locomotion on a flat surface; makes you wonder if the critters could invent **^W** evolve the wheel :-)

Re:How? (Score:1)
by the_other_one **(other_one69@MAPSONhotmail.com)** on Thursday May 11, @05:56PM EDT (#13)
(User Info)

Eventually this will evolve to replace the children so that they will not be necessary anymore.

*** CENSORED ***

Search

Make sure your code does nothing gracefully.