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Short Communication

Insight into Bio Inspired Robotics

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Abstract

I am trying to understand whole family of Biology and Synthetic Biology inspired robotics through this piece of communication. Broadly with assuming their sub categories in them I would like classify bio inspired robotics in to five major heads are Cyborg, Cylons, Soft robotics, Continuum robotics, Plantoids and Nanobots. Where Soft robots and Plantoids are quite new and interesting domains of new future of AI in many forms with advanced features. This opinion gives in your notice all about them.

Keywords: Synthetic Biology; Cyborg; Cylons; Soft robotics; Continuum robotics; Plantoids; Nanobots

Bio Inspired Robotics Model

Biology and Synthetic Biology based Robotics segmented into five types as Cylon, Cyborg, Plantoid, Nanobot and Soft robot and all are different from each other (Figure 1).

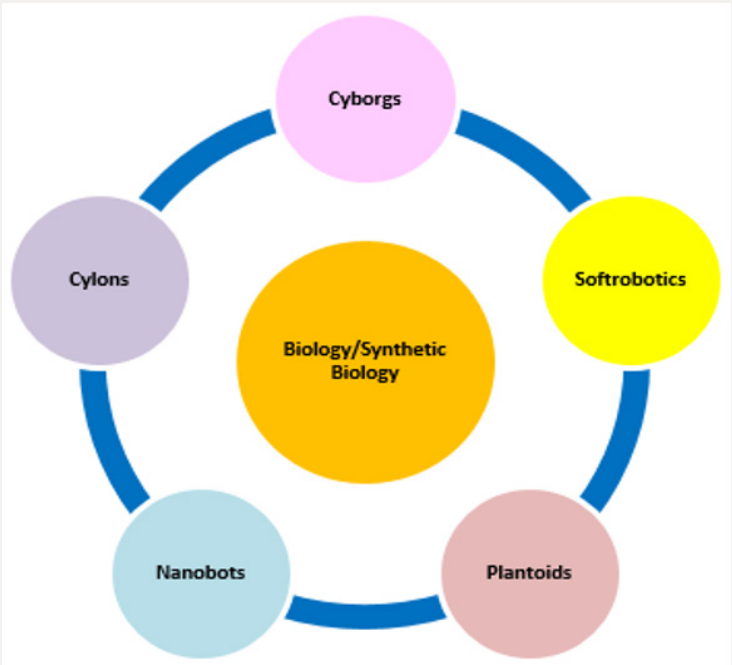

Figure 1.

Plantoids

Very interesting and my concern-oriented bio inspired robotics domain is Plantoid. A Plantoid is the plant equivalent of an android or humanoid with UAI can say it is a robot or synthetic organism designed to look, act and grow like a plant having advanced humanoid/Android like Artificial Intelligence. Plantoids based on key technology called "Blockchain". Plantoid is an autonomous blockchain-based life-form that is able to reproduce itself. It

is a hybrid creature that lives both in the physical world mode because as a mechanical contraption made up of recycled steel and electronics and in Virtual/digital world mode because as software deployed on top of a blockchain-based network. Hence ability of Physical-Virtual-Mode switching. Plantoids would be strange and useful brach of bio inspired robotics in near future with many life-forms, intelligence forms and self-reproduction forms with possible application coverage. These Blockchain based lifeforms will base on self-replicating creatures (Figure 2).

Figure 2.

Soft robotics

Soft Robotics is emerging fresh sub field in Robotics which is very useful in medical, industry, space exploration, deep sea exploration, Nano-robotics and many more likewise applications. The major benefit of Soft Robots as compare to Rigid Robots their excellent flexibility and adaptability to accomplish task. Before to move further I would like to state Soft or Continuum Robots first "Soft Robots are small, medium and big shapes various biological or non-biological body forms robots which are made up using ultra soft and flexible materials, where materials are engineered using Continuum Mechanics and Kinematics". The big difference between conventional rigid robots and soft robots, in rigid robotics intelligence engineered using AI only to control robotics body, but in soft robotics the materials using which robots has made themselves smart and has intelligence, sensations and actuations. Therefore, Soft Robots can also learn from surrounding environment in self mode as well as has greater flexibility in clutching, climbing, moving, defending etc (Figure3).

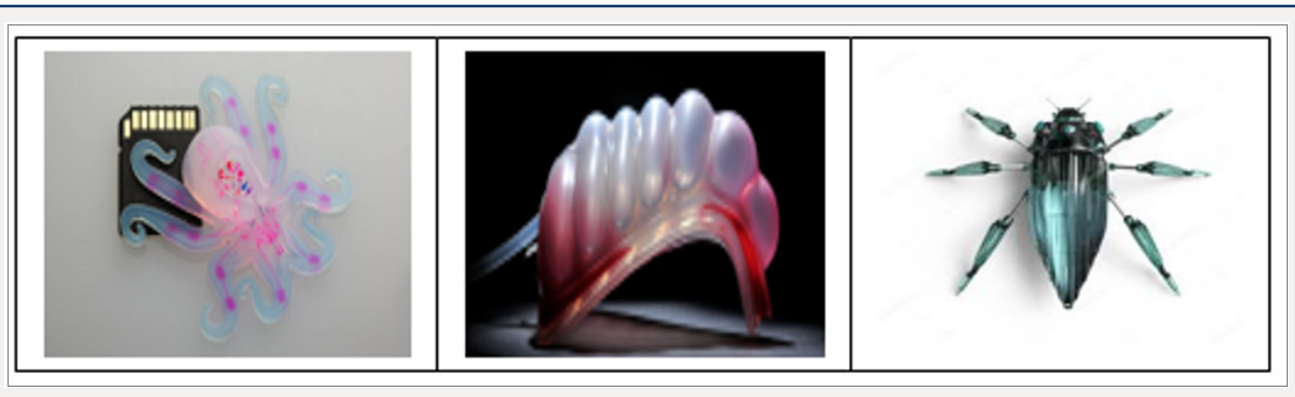

Figure 3.

Nanobots

Nanbots (Nano-robots) are the robots engineered at nano sacle using Nanotechnology at atomic, cellular, molecular levels. Nanobots are also called as nanomachines, nanorobots, nanomites, nanites or nanoids etc. Research in progress about Nanobots and when got success they are would be very useful of Human body treatments, to kill bacterias, viruses, and harmful cells, like HIV, Cancer etc inside human body. These would be tiny motors and machine injected in body to kill diseases. Hence Nanobots very useful in medical field often called Nanobots as Nanomedicines. Nanobots form using Nanoparticles, quantum particles, quntum dots at 10-9 Scale (Figure 4).

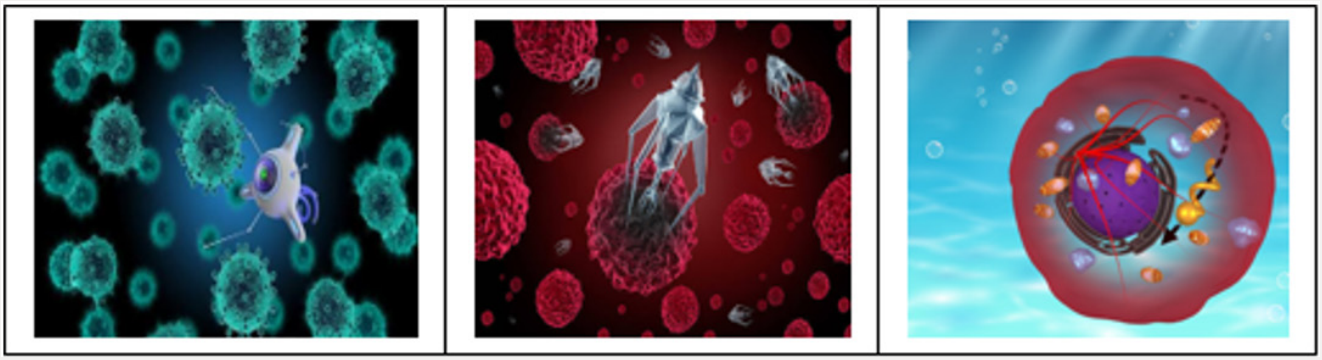

Figure 4.

Cyborgs

First get to know what is a Cyborg? It's an organism that has both organic ("natural" GOD made) and cybernetic ("machine" Electro-Mechanical Artificial and Man Made) parts engineered, implemented and cascaded in Human body for Biological medical assistance or to change ordinary human potentials, capacities and intelligence to super or ultra-power levels. In other words, when people become Cyborg, they're part human and part machine. Cyborg is another possibility in Medical as well as super artificial power domains. Cyborg "Cybernetic organism" is a being with both organic and Biomechatronic body parts using which human can increase their power in all means and branch of study is "Cyborgology" (Figure 5).

Figure 5.

Cylons

Cylons are seems to be similar like Cyborg but they have big different and let me clear what they are. Cylon specially engineered for Wars and like purposes and completely made up with regular materials only human intelligence and mimic used here, whereas Cyborg engineered or implemented in human for various purposes and partly used biological or Synthetic Biological materials. This branch has less scope and attention for research due to the rapid success in Cyborgs (Figure 6).

Figure 6.

Conclusion

Bio inspired robotics forms will change facet of world and handle routine task of mankind. These intelligence forms would be engineer and available in various sizes, forms, skills, abilities and advance features like Plantoids, Softrobots, Nanobots and Cyborgs I explained with the help of Bio Inspired Robotics Model.

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