

An Overview on Cybernetics and its Intersection of Technology and Humanity

Alexy Hills*

Department of Computer Science, Private Technological University of Santa Cruz, Sierra, Bolivia

Short Communication

Received: 17-Feb-2023,
Manuscript No. GRCS-23-93955;
Editor assigned: 20-Feb-2023, Pre
QC No. GRCS-23-93955 (PQ);
Reviewed: 06-Mar-2023, QC No.
GRCS-23-93955; **Revised:** 13-Mar-
2023, Manuscript No. GRCS-23-
93955 (R); **Published:** 20-Mar-
2023, DOI: 10.4172/2229-
371X.14.1.005

***For Correspondence:**

Alexy hills,
Department of Computer Science,
Private Technological University of
Santa Cruz (UTEPSA), Sierra, Bolivia

E-mail: hills.alexys@hotmail.com

Citation: Hills A. An Overview on
Cybernetics and its Intersection of
Technology and Humanity. J Glob
Res Comput Sci. 2023;14:005.

Copyright: © 2023 Hills A. This is
an open-access article distributed
under the terms of the Creative
Commons Attribution License,
which permits unrestricted use,
distribution, and reproduction in
any medium, provided the original
author and source are credited.

DESCRIPTION

Cybernetics is an interdisciplinary field of study that deals with the regulation and control of complex systems through the use of feedback mechanisms. It emerged in the mid-twentieth century and has since grown into a diverse and active research community with applications in fields such as engineering, biology, psychology, and social sciences.

Core concepts of cybernetics

At its core, cybernetics is concerned with understanding how systems can be regulated and controlled through feedback mechanisms. Feedback is a process of comparing the output of a system with a desired or reference output, and using this comparison to adjust the system's behavior to achieve the desired output. Cybernetics also emphasizes the importance of understanding the structure and organization of systems, and how they interact with their environment.

Applications of cybernetics

Cybernetics has numerous applications in various fields, including engineering, biology, psychology, and social sciences. In engineering, cybernetics is used to design and control complex systems, such as robots, autonomous vehicles, and industrial processes [1-2]. In biology, cybernetics is used to study complex biological systems, such as the nervous system, and to develop models of their behavior. In psychology, cybernetics is used to study human cognition and behavior, and to develop theories of learning and perception. In social sciences, cybernetics is used to study complex social systems, such as organizations and economies, and to develop models of their behavior. The applications of cybernetics are vast and varied, and they span many different fields. In engineering, cybernetics is used to design and control complex systems, such as aircraft, robots, and manufacturing processes. In biology, cybernetics is used to study the behavior of living systems, such as cells, organisms, and ecosystems, and to develop models that can help us understand and predict their behavior [3]. In psychology, cybernetics is used to study the behavior of humans and animals, and to develop theories of learning, cognition, and perception. In social sciences, cybernetics is used to study and understand complex systems such as social networks, organizations, and economies. Cybernetic models have been used to study the behavior of financial markets, to develop models of political systems, and to study the dynamics of social movements. Cybernetics has also been used in the development of artificial intelligence and machine learning algorithms, which are used in a wide range of applications, such as natural language processing, image and speech recognition, and autonomous vehicles.

One of the most exciting applications of cybernetics is in the development of autonomous systems. These systems can operate independently in complex and dynamic environments, and can adapt and learn from their environment to improve their performance over time. Autonomous systems have numerous applications, such as in robotics, unmanned aerial vehicles, and driverless cars [4]. Cybernetics has also been used in the development of smart cities, which use sensors and feedback mechanisms to optimize the use of resources and improve the quality of life for citizens. Overall, the applications of cybernetics are numerous and diverse, and they continue to expand as new technologies and techniques are developed. The future of cybernetics looks bright, and it is likely that this field will continue to play a significant role in shaping our understanding of complex systems and their behavior.

Recent developments in cybernetics

Recent developments in cybernetics have focused on the application of artificial intelligence and machine learning techniques to control and regulate complex systems. These techniques enable the development of autonomous systems that can adapt and learn from their environment, and that can operate in complex and dynamic environments [5]. Another recent development in cybernetics is the use of network science to study complex systems, such as social networks and the internet, and to develop models of their behavior.

CONCLUSION

Cybernetics is an interdisciplinary field of study that deals with the regulation and control of complex systems through the use of feedback mechanisms. It has numerous applications in various fields, including engineering, biology,

psychology, and social sciences, and has contributed significantly to our understanding of how systems can be regulated and controlled. Recent developments in cybernetics, such as the application of artificial intelligence and machine learning techniques, and the use of network science, have opened up new avenues for research and innovation. Cybernetics is a dynamic and active research community that continues to make significant contributions to our understanding of complex systems and their behavior.

REFERENCES

1. Sarvade KD, et al. Recent trends in virtual reality and computer graphics. *Int J Innov Res Technol Sci Eng Technol*. 2019; 19:135-140.
2. Jon Peddie. *The history of visual magic in computers: How beautiful images are made in CAD, 3D, VR and AR*. Springer. 2013;3: 98-101.
3. Defanti TA. The mass impact of videogame technology. *Adv Com*. 1984;23:93-104.
4. You J, et al. Real-time 3D visualization of forest fire spread based on tree morphology and finite state machine. *Comput Graph*. 2022;103: 109-120.
5. Kump A, et al. Visual analysis of multi-parameter distributions across ensembles of 3D fields. *IEEE Trans Vis Comput Graphics*. 2021; 28: 3530-3545.