

A Review Analysis on Human Computer Interaction and Usage

^[1] Amit Kumar Bansal, ^[2] Ankit Sharma, ^[3] Harsh Sahal, ^[4] Sonu Jaat

^[1] Asst. Professor

Dept. of Management

Arya Institute of Engineering and Technology, Jaipur

^[2] Asst. Professor

Computer Science Engineering

Arya Institute of Engineering Technology & Management, Jaipur

^[3] Science Student

Jaipur School, Jaipur

^[4] Science Student

Takshila Public School, Hamjapur, Bheror

Abstract: People who paintings with computers are called "users," and the field of human computer studies appears at a way to make computers paintings higher for human beings. To make computer systems which can be helpful and easy to use, people from psychology and different social research work together with humans from laptop science and associated technical fields. It consists of input and output gadgets in addition to the approaches that human beings use them to communicate. The version of Human Computer Interaction and the emotional intelligence of a person are at the coronary heart of this have a look at.

Keywords: User, Connection, Prototype, Human-Pc Interplay (H.C.I.)

1. Introduction

It is the connection among humans and computer systems, and how they work together to make software program that makes computers work for folks who use them and get worried with them. In Intelligent HCI, matters are understood higher, responses are given faster, and the gadget knows what the consumer is interested in. It has 3 parts, because the name suggests: the person, the computer, and the way they hook up with every different.

Humans: H.C.I is manufactured and used by humans for their easiness they had programmed several sets of instruction how they speak their communication their interests and other to get engaged and enjoy this.

Computer: Computer is an electronic machine developed by humans and commanded by humans in such a manner that it can understand what they want to say and what they expect to do with them and whatresult they want, their interests

Interaction: When two or more people or thingscommunicate with or react to each other then itcan be called as Interaction here we can observe the communication between humans and Computer.

2. Literature Review

Human-Computer Interaction is an area of look at and exercise that started out in the late Nineteen Seventies as a department of computer technology. This area has modified due to the fact then, supporting to interrupt down human behaviors to resolve the world's hardest problems.

Design of HCI

During 1994, Edmunds referred to four techniques to construct for human-laptop interaction (HCI). These 4 techniques have been used to make patron interfaces extra fine, green, and interactive for customers. These are the techniques:

Anthropomorphic Technique

The Cognitive Approach 3. Using a Predictive Model four. A realistic technique

Anthropogenic Approach

This approach consists of developing someone interface that acts like a person. We may additionally

want to say that it became made just so customers can communicate to it in a human-to-human way. The essential reason modified into to make the characters greater like human beings. This technique uses the cognitive technique to assist people create a device that works with their minds and senses. The most essential purpose became to make a better end-character revel in.

Approach to Predictive Models

Goals, Operators, Methods, and Section rules (GOMS) is a way to look at the one-of-a-kind components of a user revel in by the usage of seeing how prolonged it takes them to finish a purpose maximum speedy.

A Practical Approach

The empirical method to HCI is proper for searching at one-of-a-kind conceptual mind and seeing how well they paintings. During preproduction, this checking out may be completed with the aid of putting layout thoughts subsequent to every exclusive and attempting every one's usability. Users will frequently like sure additives of every layout idea, that could result in the introduction of a combined conceptual format to text.

Fidelity Prototyping

The fidelity of a prototype refers to how itconveys the look and feel of the product, we can say it is the level of detail and realism.

There are many types of Fidelity but there are two (2) major types

- Low Fidelity [Lo-Fi]
- High Fidelity [Hi-Fi]

Low-Fidelity

It is quick and easy way to get transfer high- level designs into tangible and testable artifacts, collecting and analyzing usersdemand at early stage

High-Fidelity

It is highly functional and interactive prototyping which is quite close to final product with lots of functionalities and details. It is used in usable evaluation to discover potential issues that may exist during the later workflow, interactivity



Fig 1: low-fidelity to high-fidelity

Usability

HCI's interface design is in such a way that people with different abilities and expertise usually access. And it is helpful for communities lacking for knowledge and formal training on interacting with specific

computer systems. Along with that User need not consider the intricacies and complexities of using the computer system. User-friendly interfaces ensure that user interactions should be clear, precise and Natural too.

HCI in Daily Life

We can observe so many things in our daily life which are based on HCI i.e., Smartphones, Computer, ATM, Food dispensing machine, or snack vending machine. So, we can say HCI technology plays a major role in designing the interfaces of such systems of such systems that make them usable, better and efficient.

HCI in Industry

Use of Computer technology is increasing day by day so this tends to consider HCI as a necessary business-driving force. It should be in such a manner that employees feel comfortable to use this system every day. Using these systems become easy to handle even untrained employees.

Accessible to Especially Abled People

The primary theme behind HCI was to make it accessible, usable for everyone this tends that people with a wide range of capabilities and knowledge can use HCI systems. It encompasses people with disabilities. It implies to rely on user centered technology and make it usable for people with disabilities.

Software Development Companies

Software development companies use HCI to develop software for end-users for making their product usable. HCI is the main part because their product's scale depends on its usability.

3. Conclusion

HCI is one of the most global research topics of AI researchers. New discoveries in HCI have brought a major and radical change in the computer technology world. The main focus of HCI was to develop Human behavior in Computers (as it is the interaction between Human and Computer is necessary to know about their behavior). User interface should be in such a way that it is easy to use, accessible, efficient, effective, safe, enjoyable. Each and every small step in this field will make it much easier and better.

References

- [1] A. Dickinson, J. Arnott and S. Prior, "Methods for human computer interaction research with older people"
- [2] Maja Pantic, Leon J.M. Rothkrantz, "Towards an Affect – Sensitive Multimodal Human-Computer Interaction"
- [3] Lokman I. Meho, Yvonne Rogers, "Citation Counting, Citation Ranking, and h-Index of Human-Computer Interaction Researchers: A Comparison between Scopus and Web of Science".
- [4] Jonathan Bishop, "Increasing participation in online communities: A framework for human-computer interaction"
- [5] Giovanni Iachello, Jason Hong, "End- User Privacy in Human-Computer Interaction"
- [6] John M. Carroll "Human-Computer Interaction: Psychology as a Science of Design"
- [7] Himanshu Bansa "Human Computer Interaction"
- [8] Scott Macenzie "Human computer interaction an empirical research perspective"
- [9] Suresh kumar "A scientometric study of human computer interaction research in India"
- [10] Brad Myers, Jim Hollan, Isabel Cruz "Strategic Directions in Human-Computer Interaction"
- [11] Cruz-Benito, J., Therón, R., & García-Peñalvo, F. J. (2016). Software architectures supporting human-computer interaction analysis: A literature review. In Learning and Collaboration Technologies: Third International Conference, LCT 2016, Held as Part of HCI International 2016, Toronto, ON, Canada, July 17-22, 2016, Proceedings 3 (pp. 125-136). Springer International Publishing.
- [12] Anderson "Psychology of HCI" [12] EHN P. "Work-oriented design of computer artifacts, stockholm: Arbetslivscentrum"
- [13] Wobbrock, J. O., & Kientz, J. A. (2016). Research contributions in human-computer interaction. *interactions*, 23(3), 38-44.
- [14] Helander, M. G. (Ed.). (2014). *Handbook of human-computer interaction*. Elsevier.
- [15] Lazar, J., Feng, J. H., & Hochheiser, H. (2017). *Research methods in human-computer interaction*. Morgan Kaufmann.

- [16] Kaushik, M. and Kumar, G. (2015) "Markovian Reliability Analysis for Software using Error Generation and Imperfect Debugging", International Multi Conference of Engineers and Computer Scientists 2015, vol. 1, pp. 507-510.
- [17] R. Sharma and G. Kumar, "Working vacation queue with K-phases essential service and vacation interruptions," International Conference on Recent Advances and Innovations in Engineering (ICRAIE-2014), Jaipur, India, 2014, pp. 1-5, doi: 10.1109/ICRAIE.2014.6909261.
- [18] R. Kaushik, O. P. Mahela and P. K. Bhatt, "Power Quality Estimation and Event Detection in a Distribution System in the Presence of Renewable Energy" in Artificial Intelligence-Based Energy Management Systems for Smart Microgrids, Publisher CRC Press, pp. 323-342, 2022, ISBN 9781003290346.
- [19] T. Manglani, R. Rani, R. Kaushik and P. K. Singh, "Recent Trends and Challenges of Driverless Vehicles in Real World Application", 2022 International Conference on Sustainable Computing and Data Communication Systems (ICSCDS), pp. 803-806, 2022.
- [20] Rajkumar Kaushik, Akash Rawat and Arpita Tiwari, "An Overview on Robotics and Control Systems", International Journal of Technical Research & Science (IJTRS), vol. 6, no. 10, pp. 13-17, October 2021.
- [21] Simiran Kuwera, Sunil Agarwal and Rajkumar Kaushik, "Application of Optimization Techniques for Optimal Capacitor Placement and Sizing in Distribution System: A Review", International Journal of Engineering Trends and Applications (IJETA), vol. 8, no. 5, Sep-Oct 2021.