The Domain Species Interaction Behavior Model.

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Abstract

Human-Computer Integration is an emerging research area in Computer Science that studies and analyses how the partnership between humans and computers are binded. This scientific article has the purpose for discuss and propose a new model to describe interactions among technological objects, applications, environments, and humans, based in a metaphor in biological interactions between technology and humanity.

Key words:

Interaction Design, Human-Computer Integration, Human Data Interaction .

Introduction

Human-Computer Integration is an emerging research area in Computer Science that studies and analyses how the partnership between humans and computers (related with the technologic behavior aggregated with it) are vinculated (if it's just a temporary interaction, or if it´s became a symbiotic need for the practicalities of the technology).

Since it's a new field, some challenges are to evaluate an analysis in that field, such as the scale of the interaction itself, and why the interaction is a form of integration, and not just interaction.

Motivated with such an interesting field, the objective of this report is to discuss and propose a new model to describe the interactions among technological objects, applications, environment, and humans. More than that, this model uses as a theoretic model an analogy from biology to describe this interaction. The description of which kind of interaction is present in a specific relationship between humans and machines are compared with biological integration.

Results and Discussion

There are many possible applications of this tool for describing relationships and interactions between humans and machines.
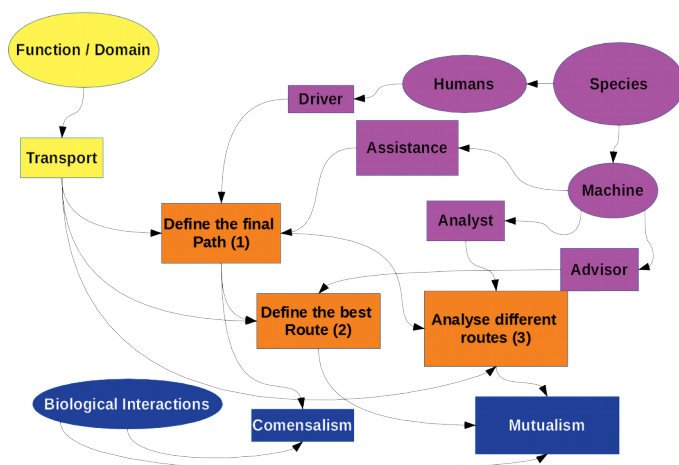

Image 1. Example of using the model to describe a GPS application.

For example, it may be used to measure qualitatively how good / how positive the relationship of determined behaviors in the system and the humans is. The expectation about all software and hardware is to be at least useful to people. For that to happen, it would be interesting that the relationship between the product and the people were mutually beneficial, which means that the people are being helped for the system, in a degree that the interaction between the system and the humans are becoming more needed, and even becoming an integration between them ,like the smartphones nowadays for the people. Since it's painful living without one when the world provides a lot of services, such as delivery of food, transport (like uber), and communication between people (like calling someone in the cell phone, or sending online messages in a social network), it's requested more and more that people has to get a smartphone to be integrated in their society (which is a evidence of the integration between smartphones and humans).

Another application for this related to interaction design is to compare possible (and fictional) scenarios with actual scenarios of applications. With this possible comparison, we believe that it is possible to improve computational systems (since interface, until features and applications) , since they could be more pleasurable, intrinsic and symbiotic to humans. Doing this analysis between each case scenario, we can improve a lot of systems to human beings, and even provide new features and services to them, just because this model can create easily a new behavior between the existing elements of the scenario.

Conclusions

This paper proposes a new model that can evaluate the interactions between humans and machines, which is able to measure the degree, the relevance and impact of the interactions. Also, the model is able to be made by a real case scenario, and also by an abstract, or generic, scenario. This means that the model can be used to improve an existing feature in the system, or by creating a new one.

In future works, we will analyse the model proposed in real case and diverse scenarios, to see the interaction and usability of the model, and perhaps, propose improvements in the analysed systems.

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