

Peer Review

Review of: "Channeling the Flow – A Metaphor for Computer Programs"

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"Channeling the Flow – A Metaphor for Computer Programs" offers an innovative and conceptually rich perspective on computer programming. It uses the metaphor of flow and constraints to challenge conventional notions of what it means to program. Rather than viewing programming as an act of creation, the author proposes understanding programming as shaping an already existing, undetermined process through constraints – like channelling water flow.

One of the main qualities of the work is its philosophical and metaphorical thinking, which opens the door to a deeper understanding of the nature of programming. The author skillfully uses the analogy of channels, where water represents a fundamental physical force, and the built structures are analogous to the program code that directs the flow – in this case, the flow of electrons or the flow of execution within a computer. This metaphor allows the reader to see programming not only as a technical process but also as an epistemological and cognitive process.

The paper is particularly successful in showing how the same metaphor can have a foothold at different levels of a computer system – from the physical level (electron flow) to the abstract (e.g., program execution and memory state traversal). The author emphasizes the universality of computers as a key argument for the claim that computers themselves do not have an innate directionality, but rather that the program defines the direction and behavior of the system.

Also very interesting and successful is the application of the metaphor in other contexts, such as playing board games, where the constraints of the rules and the choice of moves are viewed as a form of programming the behaviour of the participants. This further deepens the basic thesis of the paper and extends its relevance beyond the boundaries of computer science.

Despite its numerous strengths, the paper also has several weaknesses. Although the use of the metaphor is thought-provoking, in some parts it leads to excessive abstraction and separation from concrete

programming experience, which can make the practical application of the ideas presented more difficult. Some readers might wish for more real-world examples, more concrete code illustrations, or applications of the metaphor in specific programming paradigms (e.g., imperative, object-oriented, functional) to strengthen the argument and make it accessible to a wider audience.

Also, while the paper demonstrates good theoretical grounding and references relevant literature, it sometimes lacks a deeper discussion of these sources and their connection to the paper's main thesis. This misses the opportunity to anchor the ideas in the paper more firmly in existing scholarly discourse, thereby increasing its academic credibility.

In conclusion, "Channeling the Flow - A Metaphor for Computer Programs" is an original and stimulating contribution to thinking about programming. Its strength lies in the creative use of metaphor that invites reflection and reinterpretation of what programming means. While it could use more concreteness and technical elaboration in some aspects, the paper manages to offer a fresh perspective that can enrich and deepen understanding of this crucial digital activity.

Declarations

Potential competing interests: No potential competing interests to declare.