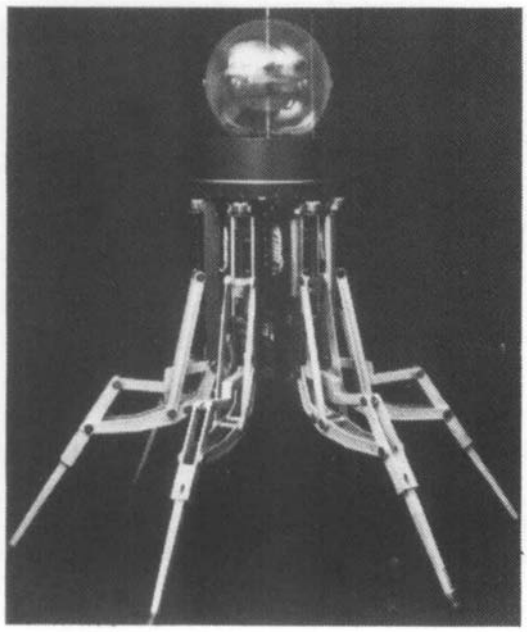
Mind Children

The Future of Robot and Human Intelligence

Hans Moravec



Written by the renowned roboticist, Hans Moravec (Director of the Mobile Robot Laboratory of Carnegie-Mellon University), *Mind Children* offers a mind-boggling glimpse of a world we may soon share with our artificial progeny. Moravec argues that within fifty years we will achieve human equivalence in our machines, not only in their capacity to reason, but also in their ability to perceive, interact with, and change their environment.

But human equivalence is just the beginning. Moravec challenges us, as we approach the end of this millennium, to speculate about this postbiological future and the ways in which our own minds might participate in its unfolding.
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Biological Cybernetics

Communication and Control in Organisms and Automata

The concepts of processing of information, transmission of information and automatic control originated within physics, computer science and technology. In the meantime these concepts have also proved powerful in the biological sciences, where analogous processes are encountered. Many logical procedures, and mathematical techniques applicable to the physical sciences also find important applications in the realm of the life sciences. Conversely, physicists, computer scientists and engineers have shown increasing interest in natural mechanisms of computation, communication and control.

A fundamental idea that has emerged from the field of computer science and artificial intelligence is that information processing tasks must be understood independently of the physical mechanisms that embody the computations. As a consequence, a new computational science of information processing is now taking shape with important implications for both neurobiology and artificial intelligence. Furthermore, there is now a growing need in the area of basic sciences and for applications, such as robotics, of understanding the computations involved in perceptual and motors tasks, independently of whether they are carried out by organisms or by machines.

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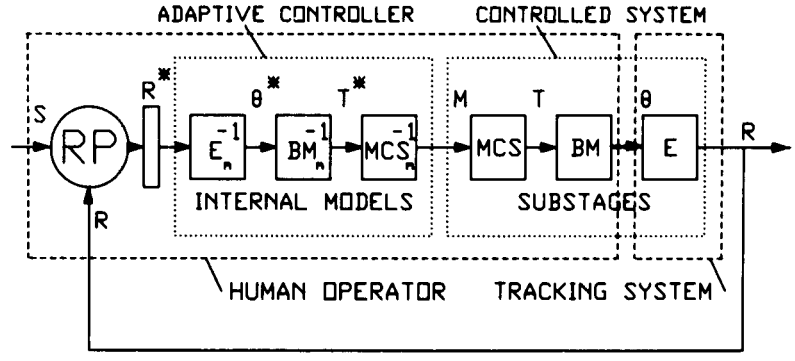

Schematic diagram of central processes involved in the performance of a visual pursuit tracking task.

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