

Thirty-Five Years of Artificial Emotions: An Extended Case History

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A Working Hypothesis, Inc

Artificial emotions are being designed into a wide variety of products from interactive games to elder care robots as part of their man-machine interface. This includes both recognition and simulation of human emotional responses. The author describes his experiences developing emotion simulators for artificial intelligence and robotics since 1973, using analog and digital techniques. He has introduced these synthetic emotions into increasingly complex artificial nervous system designs, some having extensive knowledge bases, semi-autonomous operation and limited self-awareness. The author's body of work includes emulation of childhood growth and development, pain-pleasure neural functions, stress hormone release, analgesic and addictive narcotic responses, oxytocin mediated trust activity, the mammalian fear mechanism, the endocannabinoid system, long-term potentiation in the hippocampus for establishing memory, autism-spectrum disorders, fibromyalgia/chronic fatigue syndrome and various psychiatric diseases (all of which have emotional frames of reference). Man-machine ethical considerations in this kind of experimentation are discussed.

(Over 40 citations are included).