

Practical Artificial Intelligence using Complementary Techniques

Data science is a big part of artificial intelligence, but it is not the complete picture.

A wide range of techniques has emerged from the field of AI including neural networks, deep learning, rules, frames, model-based reasoning, case-based reasoning, Bayesian updating, fuzzy logic, multiagent systems, swarm intelligence, and genetic algorithms.

They are all ingenious and useful in narrow contexts. It will be argued in this presentation that a truly intelligent system needs to draw on a variety of these approaches within a hybrid system. Five distinct ways to enhance or complement one technique with another will be identified. Several practical examples will be presented, ranging from medical diagnosis to the control of specialised manufacturing processes.