



Barbara Rinehart

TRADE PUBLICATION FEATURE ARTICLE INFORMATICS

My responsibilities were:

- Worked with editor to clarify topic
- Researched latest technology
- Wrote and edited copy
- Referenced and annotated work

BYLINE

MEDICINE Behavior

Mechanized Medicine-The Laying Off of Hands

by Barbara Rinehart

Computers and their "brains" are affording new ways to approach decision-making in medicine, and have perhaps rendered the traditional laying-on of hands obsolete. The neural networks of Artificial Intelligence (AI) are challenging the human neural network and are frequently winning; the literature is replete with examples where in computer beats man: Tourassi et al. (1995) demonstrated an artificial neural network that outperformed physicians when diagnosing pulmonary embolism, and Hallan et al. (1997) observed physician against computer in the diagnosis of acute appendicitis. We are even beginning to see computer against computer in these diagnostic matches (Molino et al., 1996).

Marvin Minsky, of the Massachusetts Institute of Technology's Artificial Intelligence Group, defines AI as the science of making machines do things that would require intelligence if done by man. Early AI systems employed crude and informal models of problem solving, using an "on-off" and "if-then" digital format that dealt with precise bits of data.

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decisions based on partial or inaccurate information. truthful during a patient history. A good physician tal machine cannot do. Early computers did not learn, it possible for machines to perform despite missing n which computers perform like the human brain.

ogitation, reasoning, deliberation, speculation, networks may have this ability. Turban et al. (1995) own nervous system operates.

eed to act more like human brains, storing and a, but rather as many shades of gray. Informatics

n-making and the essence of fuzzy logic:

with a problem, the available information is often ecision under uncertainty. Expert systems for medical e collected during anamnesis and generally contain weak and so on, making it difficult to model them with an interesting tool to deal with the representation of : variables) to numerical variables, which are more

ypical of those heard while taking a patient history: "It

fields of medicine, most notably in radiology and er fields. Larsson et al. (1997) describes Guardian, an ents. Nguyen et al. (1997) report on success with

ts as accurate as its human malities (Spurgeon, 1996). Explain, Iliad, Meditel and ned to improve patient outcome and quality of care.

de interactivity, flexibility and adaptability for support systems use data, provide easy user interface t al. (1995), the ideal decision support system has the

Medicine

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