MAE 552
Heuristic Optimization

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Lecture #29

4/12/02

Neural Networks

Neural Networks

What is a Neural Network?

Neural Networks

We alluded to the fact that we are using the brain as a model.

When we think of the brain and how it functions, what do we think of ?

Neural Networks

What do we know about the functioning of the brain? That is, what special abilities does the brain have that digital computers do not?

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Thought Exercise:

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What did you see?

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Consider speech. Do you begin searching every word in your vocabulary every time you need to use one until you have found one that has the proper meaning?

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Thought Exercise:

Neural Networks

Thought Exercise:

Neural Networks

So how can we mimic the functioning of the brain to capitalize on these abilities that it has?

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So what do we get?

1. Non Linearity:

2. I/O Mapping:

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3. Adaptability:

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4. Evidential Response:

5. Fault Tolerance:

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6. VLSI Implementability:

7. Uniformity of analysis and Design:

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8. A Powerful Analogy: