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?
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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?
Neural Networks
Neural Networks

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: