Lecture 3

Analytical Learning Discussion (1 of 4): Explanation-Based and Inductive Learning in ANNs

Monday, January 24, 2000

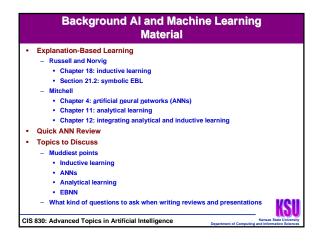
William H. Hsu Department of Computing and Information Sciences, KSU http://www.cis.ksu.edu/~bhsu

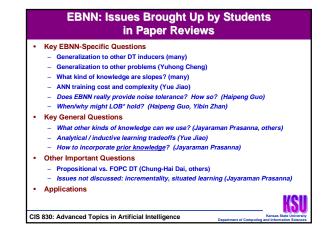
Readings: Chapter 21, Russell and Norvig "Integrating Inductive Neural Network Learning and Explanation-Based Learning", Thrun and Mitchell

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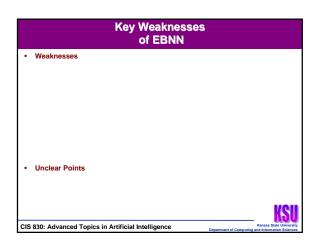
Presentation Outline Paper "Integrating Inductive Neural Network Learning and Explanation-Based Learning" - Authors: S. B. Thrun and T. M. Mitchell Overview - Combining analytical learning (specifically, EBL) and inductive learning Spectrum of domain theories (DTs) · Goals: robustness, generality, tolerance for noisy data Explanation-Based Neural Network (EBNN) learning Knowledge representation: artificial neural networks (ANNs) as DTs · Idea: track changes in goal state with respect to guery state (bias derivation) Topics to Discuss Neural networks: good substrate for integration of analytical, inductive learning? How are goals of robustness and generality achieved? Noisy data tolerance? Key strengths: approximation for EBL; using domain theory for bias shift Key weakness: how to express prior DT, interpret explanations? • Example Paper Reviews: Online (Course Web Page) 1

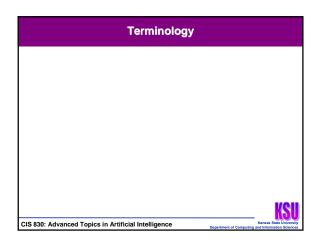
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Key Strengths of EBNN	
Strengths	
Applications	
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Summary Points	
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