HATS Project
Model Mining at KTH
2010-05-12 Amsterdam Meeting

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Background in Learning

• Context: learning automata from dynamic behavioral information (runs)
• Complete learning: well known in literature e.g. Angluin ID, L*, ...
• Incremental learning: less well known
  – IID algorithm (Parekh et al.)
  – RPNI2 (Dupont)
Summary of Activities (1)

• Correctness and Performance of IID learning algorithm (MS and KM)
  – Correct bugs
  – New proof of correctness
  – Implementation
  – Analysis of complexity
  – Suitable for finite data types (bit slicing)
Summary of Activities (2)

- CGE (congruence generator extension) algorithm (KM and NF)
  - New algorithm
  - Proof of Correctness
  - Implementation
  - Query efficient
  - Suitable for abstract data types (HATS)
Future Work

• IID algorithm seems adequate for finite data types
• CGE algorithm extends to infinite data types
• What kinds of infinite state system can be learnt?
  – under/over approximation
• Applications to test case generation (learning-based testing HATS)
Learning-based testing