Comp24412: Symbolic AI
Lecture 18: How to pass the exam

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• There are four main areas we covered in the course:
  • Prolog
  • Symbolic AI
  • Logic
  • Natural Language

• You can expect questions in all areas.
• You can expect questions which combine areas.
A really good idea is to do the reading:


- Patrick Blackburn, Johan Bos and Kristina Striegnitz, *Learn Prolog Now!*,
  http://www.learnprolognow.org/

- The course notes (for search, planning, Satchmo, natural language syntax).
Prolog:

- Basic Prolog syntax.
- Standard predicates, e.g. name/2, =../2, call/2 etc.
- Ability to write small programs.
- The relation between Prolog and first-order logic.
• AI:
  • Search techniques and algorithms.
  • Examples and applications such as Towers of Hanoi, Travelling Salesman.
  • The application of logic in AI. Using logic for planning.
• Logic:
  • Syntax and semantics of first-order logic.
  • Translating between English and first-order logic.
  • The Satchmo theorem-prover.
  • Resolution theorem-proving: the resolution and factoring rules.
  • The concept of soundness and completeness for proof-systems (such as resolution theorem-proving).
  • Ability to construct simple resolution proofs.
Natural Language:
- Basic syntax of English according to transformational grammar (as set out in slides).
- Parsing using Prolog dcgs, including movement.
- The (simply typed) lambda calculus.
- Ability to calculate semantics of simple sentences using semantically annotated context-free grammars.
- Implementation of semantically annotated context-free grammars in Prolog.
• Practice papers. Look at the following years.
  • 2014–15
  • 2012–13
  • 2011–12 (first two questions only)
  • 2009–10 COMP20442.
  • 2008–9 COMP20442.
  • 2007–8 COMP20442.

  Warning: other years may not be a good guide to question style.

• This year, there will be a choice of three out of four questions.
• The exam is closed-book and lasts 2 hours.
• It’s moderately tough, but you should do okay.