Kunstig Intelligens og Intelligente Systemer (KIIS)

Første kursusgang onsdag den 8. september 2004 kun 9.30-12.00

Udskriv og skim siderne 1-30 i følgende materiale fra kursets hjemmeside på adressen http://www.ruc.dk/~jv/KIIS2004

Om matematisk logik

Kursusansvarlig underviser: *Jørgen Villadsen* jv@ruc.dk
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Lektor RUC Datalogi siden 2002

- Adjunkt DTU Datalogi, Civilingeniør, PhD (samlet cirka 10 år)
- Forskning og udvikling uden for universiteterne (samlet cirka 10 år)

Profile: Jørgen Villadsen - Associate Professor - Ph.D. M.Sc. (Eng.)

Main interest is computational logic, understood as logic in computer science, in particular with respect to applications in intelligent systems, computational linguistics, and computer security.

Interests also include theoretical computer science, algorithms, programming languages, automated reasoning, and information systems.

Recent work on the handling of inconsistent information, also known as paraconsistency:

- *A Paraconsistent Higher Order Logic*
  International Conference on Artificial Intelligence and Symbolic Computation 2004
- *Paraconsistent Assertions*
  International Conference on Multiagent System Technologies 2004
- *Supra-Logic: Using Transfinite Type Theory with Type Variables for Paraconsistency*
  World Congress on Paraconsistency 2003
- *Paraconsistent Query Answering Systems*
  International Conference on Flexible Query Answering Systems 2002
- *Combinators for Paraconsistent Attitudes*
  International Conference on Logical Aspect of Computational Linguistics 2001

artificial intelligence (AI)

1. The ability of a computer or other machine to perform those activities that are normally thought to require intelligence.
2. The branch of computer science concerned with the development of machines having this ability.

intelligence

1a. The capacity to acquire and apply knowledge.
1b. The faculty of thought and reason.
1c. Superior powers of mind.
2. An intelligent, incorporeal being, especially an angel.
3. Information; news.
4a. Secret information, especially about an actual or potential enemy.
4b. An agency, staff, or office employed in gathering such information.
4c. Espionage agents, organizations, and activities considered as a group.

Herbert Simon

We call programs intelligent if they exhibit behaviors that would be regarded intelligent if they were exhibited by human beings.

Elaine Rich

AI is the study of how to make computers do things at which, at the moment, people are better.

Stuart Russell and Peter Norvig

AI has to do with smart programs, so let's get on and write some...

... but then they discuss definitions of artificial intelligence according to eight recent textbooks!

IEEE-CS & ACM Computing Curricula 2001 (Computer Science) offers the following scope:

Intelligent Systems (IS)

The field of artificial intelligence (AI) is concerned with the design and analysis of autonomous agents. These are software systems and/or physical machines, with sensors and actuators, embodied for example within a robot or an autonomous spacecraft. An intelligent system has to perceive its environment, to act rationally towards its assigned tasks, to interact with other agents and with human beings.

These capabilities are covered by topics such as computer vision, planning and acting, robotics, multiagents systems, speech recognition, and natural language understanding. They rely on a broad set of general and specialized knowledge representations and reasoning mechanisms, on problem solving and search algorithms, and on machine learning techniques.

SN's Beskrivelse - Udvidet

Kursusnavn:	Kunstig Intelligens og Intelligente Systemer (KIIS)
Engelsk navn:	Artificial Intelligence and Intelligent Systems
Forudsætninger:	Der forventes kendskab til databaser, svarende til kurset Databaser, og kendskab til objektorienteret programmering, svarende til kurset Objektorienteret Programmering.
Mål:	Kurset giver en introduktion til kunstig intelligens og fokuserer specielt på intelligente systemer og på avancerede database-emner. Integration mellem teori og praksis giver større udbytte for de studerende, da det muliggør en syntetisering af teori gennem praktisk anvendelse.
Indhold:	På kurset introduceres til følgende emner: logik, fuzzy logik, regelbaserede systemer, neurale netværk, data mining og natursprogsanalyse. Der lægges vægt på den praktiske del, som involverer objektorienteret programmering og databaser. I denne forbindelse arbejdes der med en gennemgående opgave, der relaterer til udvalgte emner.

Kursusform:	Forelæsning, øvelser samt studerendes fremlæggelser.
Sted:	RUC Møderum 43.2-43.
Kursusdag:	Onsdage 9.30-12.00 & 13.00-15.30 (i alt 11 gange)
Eksamensform:	Mundtlig eksamen med udgangspunkt i afleveringsopgave (uden forberedelsestid ved eksamen, varighed ca. 30 min. pr. studerende inkl. votering).
Eksamenstidspunkt:	12. januar 2005.
Undervisere:	Jørgen Villadsen (Kursusansvarlig).