AI Ü1 26. OKT. 2011

1.1.)

a.)
- Russ Anderson's robot ping pong player (1988), U. of Pennsylvania
- Toyo (Toshy Robotics, Vietnam), four high speed cameras, neural networks
  not (yet) pro level
- students from U. of Adelaide
- Not: Ball-launching machines (they don't really play)

b.)
not yet. see Urban Challenge (2007)
center of Cairo: highly dynamic, unpredictable
vs. UC: well-defined scenarios, human drivers obey traffic rules (most of the time)

c.)
yes: GIS, Jack, WBridge5

d.)
yes: dozens of automated theorem provers exist, e.g.: Vampire, Paradox, Otter, E
discovering (or judging the relevance) of new theorems however difficult
mostly assist

e.)
no: computer-generated prose usually unintentionally funny.
most systems only echo back what has been memorized or generate new jokes following a certain scheme or pattern

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difficult: needs at least natural language understanding and common sense reasoning.

f.) yes: e.g. Prolog-based system for social security and national law in the UK (however always limited domains)

g.) yes: e.g. Wahlster's Verbmobil (2000) restricted topics such as making appointments, booking travels, etc.

also MASTOR (IBM)
Google Translate

Necessary techniques: ASR (Autom. Speech Recogn.)
NLU (Natural Lang. Underst.)
MT (Machine Transl.)
NLG (Natural Lang. Gen.)
TTS (Text to Speech)

h.) yes: robots perform surgical operations but always under the control of a doctor.
ROBODOC cleared by U.S. FDA

AI Ü4

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7.2.)

a.)

~~Performance Eu~~

Performance measure	Environment	Actuators	Sensors
domestic robot	time, completing tasks, energy consumption	home environment (furniture, household items, humans, pets)	wheels, robotic arms + gripper, loud speaker	microphone, ultra sonic, infra red cam, laser range finders, camera, IMU (inertial measur. unit)
poker playing agent	#won games, #chips won	poker game (cards, chips, opponents)	check, call, bet, fold, raise	own hand, opponents' actions, #chips (own + opp.), community + Pot cards
mars rover	amount & quality of data, travelled distance, speed, life span	Mars surface (soil, dust, rocks, other rovers, weather, ...) voltage of batt.	wheels, robotic arms, solar panel, radio (sender)	radio (receiver), cam, chroma tograph, spectrum meters