2020-2021 1-GS Methods in AI research (INFOMAIR)
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Review Test Submission: Quiz Lecture 6 (Cognitive Modeling)

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Course	2020-2021 1-GS Methods in AI research (INFOMAIR)
Test	Quiz Lecture 6 (Cognitive Modeling)
Started	9/23/20 11:54 AM
Submitted	9/23/20 12:06 PM
Due Date	9/23/20 4:00 PM
Status	Needs Grading
Attempt Score	Grade not available.
Time Elapsed	12 minutes
Results Displayed	All Answers, Submitted Answers, Correct Answers, Feedback, Incorrectly Answered Questions

Question 1

10 out of 10 points

What are advantages of computer models/simulations for science? Tick all that apply

Selected Answers:
- ✓ It is a formal specification of a theory
- ✓ Working code is detailed
- ✓ It can make predictions
- ✓ You can understand by building
- ✗ They are cool
- ✗ They can be applied in applications

Answers:
- ✓ It is a formal specification of a theory
- ✓ Working code is detailed
- ✓ It can make predictions
- ✓ You can understand by building
- They are cool
- They can be applied in applications

Response Feedback: There are four correct answers here. Although they are now shown as multiple choice, you should know this by heart and also be able to answer without being provided with options.

Question 2

10 out of 10 points

What is or are (a) *general* reason(s) for using models (e.g., user models) for practice? Click all that apply.

Selected Answers:
- ✗ To create game opponents
- ✓ To have human-like experiences
- ✓ To make appropriate (adaptive) decisions due to understanding of the user
- ✗ For intelligent tutoring systems
- ✗ To adapt the interface

Answers:
- To create game opponents
- ✓ To have human-like experiences
- ✓ To make appropriate (adaptive) decisions due to understanding of the user
- For intelligent tutoring systems
- To adapt the interface

Response Feedback: The correct answers were:

- To have human-like experiences

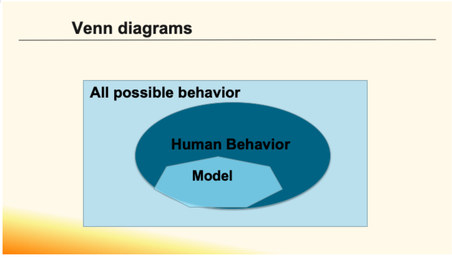
- To make appropriate (adaptive) decisions due to understanding of the user

The other answers are only specific examples, and therefore not generic reasons.

Question 3

10 out of 10 points

Below is a Venn diagram that shows a model relative to human behavior. The model is an example of a ....



Selected Answer: ✓ overconstrained theory

Answers:
- cognitive architecture
- cognitive model

- underconstrained theory
- ✓ overconstrained theory
- turing machine
- perfect theory

Response Feedback: Correct

Question 4

0 out of 10 points

Imagine the following scientific question: "What is our general memory capacity?"
If this question is addressed with a model, then this is an example of a ..

Selected Answer: ✗ Cognitive model question

Answers:
- Cognitive model question
- ✓ Cognitive architecture question
- inappropriate question
- psycho-social question

Response Feedback: Incorrect. This is a question about the cognitive architecture.

Cognitive architecture level questions are about general aspects of human cognition, cognitive model questions are about more specific questions for specific tasks (e.g., "How do we calculate 101 x 7 – 3 (given architecture)")

Question 5

0 out of 10 points

Consider this case study: A researcher wants to build an "intelligent e-mail notification system". This system dynamically tracks how "busy" a person is using a cognitive model. Based on the model, the system finds opportune moments to notify the person of incoming e-mails. For example, only when the person is judged to be not too busy (an example would be when they are checking Facebook). The researcher tests the system with a pilot dataset of 20 users that perform various tasks on the computer such as inserting data in a spreadsheet, typing e-mails, and checking facebook. She wants to find the most opportune moments to notify the user of e-mails in the future. The researcher has access to the following data (all measured in 20 ms accuracy):

- what tasks the person/user works on when
- eye-movement data: where do they look when?
- mouse clicks: what do they click when?
- key presses: what do they type when?

If they were to model this, which of Newell's bands would be most appropriate?
(side-note: normally, I would also ask for a motivation. I could of course also ask you to classify this using Marr's levels)

Selected Answer: ✗ Rational

Answers:
- Computational
- Algorithmic

- Implementation
- Biological
- ✓ Cognitive
- Rational
- Social

Response Feedback: Incorrect. The correct answer was the cognitive band, as the behavior occurs at the ms to seconds level, which is the cognitive band.
Note that some of the distracting terms in this question were Marr's bands (computational, algorithmic, implementation)

Question 6

10 out of 10 points

Jussi made a computer simulation of how the human visual system, memory, and manual actions interact to type letters on a keyboard. What type of model would this be in Marr's terms?

Selected Answer: ✓ Algorithmic

Answers:
- Computational
- ✓ Algorithmic
- Cognitive
- Implementation

- Cognitive architecture

Response Feedback: Correct. This is an algorithmic level model, as it explains the process (or strategies) that are used to type.
Note that although there is integration of ideas from memory, vision and action, the answers "cognitive architecture" and "cognitive" are incorrect, as these are not terms from Marr's framework.
Note that I would typically also ask you to explain your answer.

Question 7

Needs Grading

Are any aspects of the lecture material unclear, or do you have follow-up questions about this?
If I have your feedback in time AND if there is sufficient time to do so, I will try to address this during the live lecture that is associated with this question.

Leave this blank if you do not have any questions.

Selected Answer: Thanks!
Correct Answer: [None]
Response Feedback: [None Given]

Wednesday, November 4, 2020 10:30:00 PM CET

← OK