

Intelligent Systems (AI-2)

Computer Science CPSC422, Lecture 1

Sept 6, 2017

People

Instructor

- **Giuseppe Carenini** (carenini@cs.ubc.ca; office ICCS 105)

Natural Language Processing, Summarization, Preference Elicitation, Explanation, Adaptive Visualization, Intelligent Interfaces·····

Office hour: my office, TBD

Teaching Assistants (office hours TBD)

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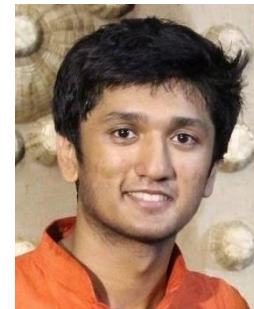
Jordon Johnson

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Your UBC-AI Background

I took 322 within the last 12 months

A. *yes*

B. *no*

I took Machine Learning (340)

A. *yes*

B. *no*

Course Essentials(1)

- **Course website:**

www.cs.ubc.ca/~caenini/TEACHING/CPSC422-17/index.html

- This is where most information about the course will be posted, most handouts (e.g., slides) will be distributed, etc.
- **CHECK IT OFTEN!** (draft already available)



- **Lectures:**

- Cover basic notions and concepts known to be hard
- I will try to **post the slides in advance** (by 11:30).
- After class, I will post the same **slides inked** with the notes I have added in class.
- Each lecture will end with a set of **learning goals**:

Student can...

Course Essentials(2)

Textbook: Selected Chapters from

- **Artificial Intelligence**, 2nd Edition, by Poole, Mackworth.
<http://people.cs.ubc.ca/~poole/aibook/>

Reference (if you want to buy a book in AI this is the one!)

- **Artificial Intelligence: A Modern Approach**, 3rd edition, by Russell and Norvig [book webpage on course webpage]

More readings on course webpage...

Course Essentials(3)

Connect





- **Piazza** : discussion board
 - Use the **discussion board** for questions about assignments, material covered in lecture, etc. That way others can learn from your questions and comments!
 - Use **email** for private questions (e.g., grade inquiries or health problems).
- **Connect** : assignments, grades, **iClicker registration**
- **AIspace** : online tools for learning Artificial Intelligence
<http://aispace.org/>
 - Under development here at UBC!
 - Already used in cpsc322



Course Elements

- **Practice Exercises:** 0%
- **Assignments:** 15%
- *Research Paper Questions & Summaries* 10%
- **Midterm:** 30%
- **Final:** 45%
- **Review Exam:** 1% bonus
- **Clickers** 3% bonus (1% participation + 2% correct answers)

If your final grade is $\geq 20\%$ higher than your midterm grade:

- Midterm: 15% 
- Final: 60% 

Assignments

- There will be **four** assignments in total
 - They will not necessarily be weighted equally
 - They will be submitted using **Connect**
 - Only the **most recent** submissions will be graded
- **Group work (same as 322)**
 - you **can** work with a partner
 - ✓ Each partnership hands in a **joint** assignment submission with both students' names/IDs
 - you may **discuss** questions with other students
 - you may **not look at or copy** each other's written work
 - You may be asked to sign an **honour code** saying you've followed these rules

Assignments: Late Days (same as 322)

- Hand in by noon on due day (on Connect)
- You get four late days 😊
 - to allow you the flexibility to manage unexpected issues
 - additional late days will **not** be granted except under truly exceptional circumstances
- **A day is defined as:** all or part of a 24-hour block of time beginning at noon on the day an assignment is due
- Applicable to assignments only (**not** midterm or final)
- if you've used up all your late days, you lose **20% per day**
- **Assignments will not be accepted more than four days late**

Missing Assignments / Midterm / Final

Hopefully late days will cover almost all the reasons you'll be late in submitting assignments.

- However, something more serious like an extended illness may occur 😞
- **For all such cases:** you'll need to **provide a note** from your doctor, psychiatrist, academic advisor, etc.
- **If you miss:**
 - **an assignment**, your score will be reweighted to exclude that assignment
 - **the midterm**, those grades will be shifted to the final.
 - **the final**, you'll have to write a make-up final as soon as possible.

How to Get Help?

- Use the course **discussion board** for questions on course material (so keep reading from it !)
- If you answer a challenging question you may get **bonus points!** 😊
- Go to **office hours**
 - times will be finalized by next week
 - **Poll to be posted on Piazza**
- Can schedule by appointment if you can document a conflict with the official office hours

Getting Help from Other Students? From the Web? (Plagiarism)

- It is **OK** to talk with your classmates about assignments; learning from each other is good
- **But you must:**
 - **Not copy** from others (with or without the consent of the authors)
 - Write/present your work **completely on your own** (code questions exception)
- **If you use external source (e.g., Web) in the assignments. Report this.**

e.g., “bla bla bla····.” [wikipedia]

Getting Help from Other Sources? (Plagiarism)

When you are in doubt whether the line is crossed:

- Talk to me or the TA's
- See **UBC official regulations** on what constitutes plagiarism (pointer in course Web-page)
- Ignorance of the rules will not be a sufficient excuse for breaking them

Any unjustified cases will be **severely dealt with** by the **Dean's Office** (that's the official procedure)

- My advice: better to skip an assignment than to have “**academic misconduct**” recorded on your transcript and additional penalties as serious as expulsion from the university!

Clickers – Cheating

- Using another person's clicker
- Having someone use your clicker

is considered **cheating** with the same policies applying as would be the case for turning in illicit written work.

To Summarize

- All the course logistics are described in the course Webpage

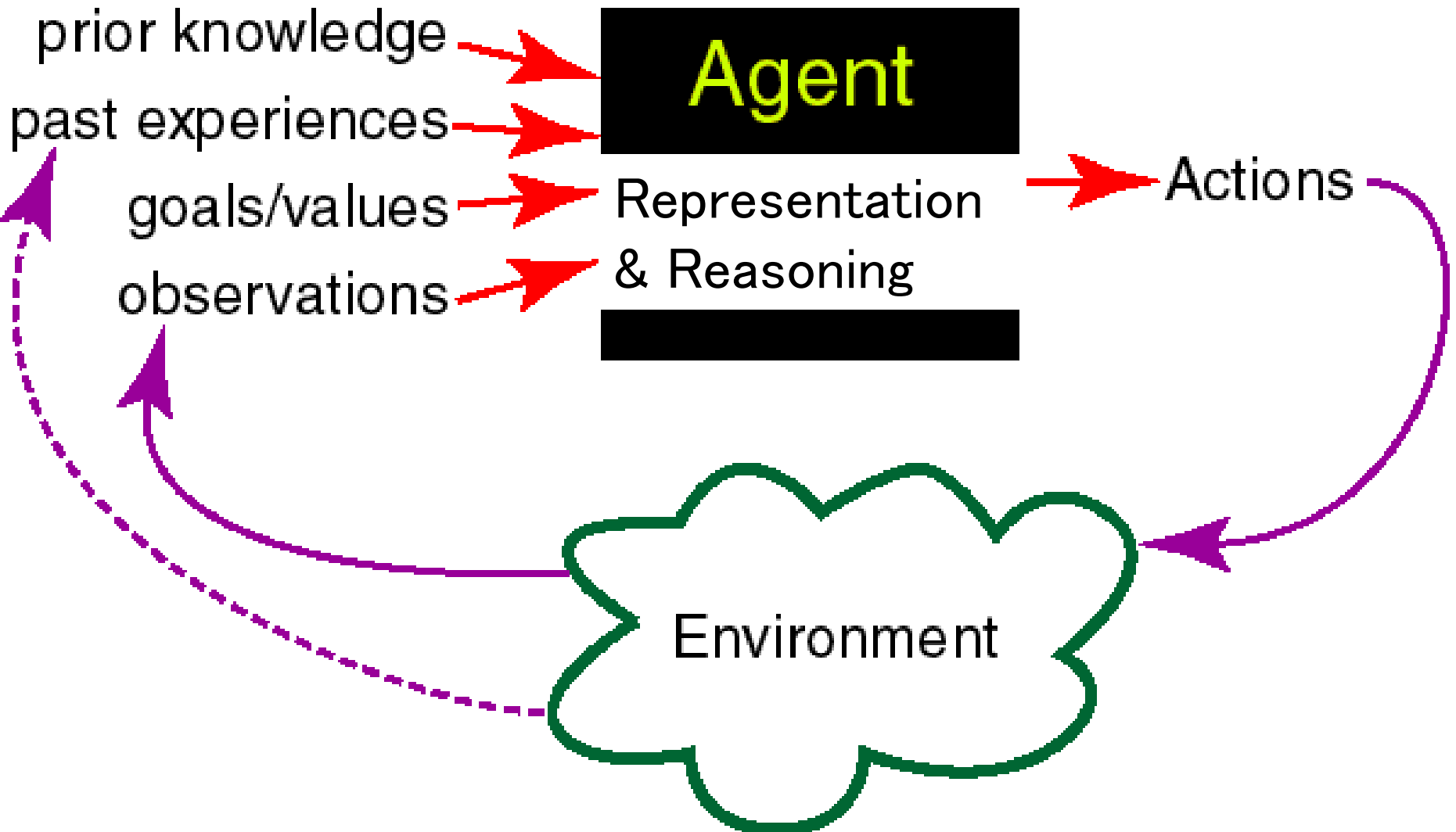
www.cs.ubc.ca/~carenini/TEACHING/CPSC422-17/index.html

Or WebSearch: Giuseppe Carenini

(And summarized in these slides)

- Make sure you carefully read and understand them!

Agents acting in an environment



Cpsc 322 Big Picture

Environment

Deterministic

Stochastic

Problem

Constraint Satisfaction

Arc Consistency

Search

Vars + Constraints

SLS

Static

Query

Logics

Search

Belief Nets

Var. Elimination

Markov Chains

Sequential

Planning

STRIPS

Search

Decision Nets

Var. Elimination

Representation

Reasoning
Technique

422 big picture

StarAI (statistical relational AI)

Hybrid: Det +Sto

Prob CFG

Prob Relational Models

Markov Logics

Deterministic

Stochastic

Query

Planning

<p><i>Logics</i> <i>First Order Logics</i></p> <p><i>Ontologies</i></p> <ul style="list-style-type: none"> • Full Resolution • SAT 	<p><i>Belief Nets</i></p> <p>Approx. : Gibbs</p> <p><i>Markov Chains and HMMs</i></p> <p>Forward, Viterbi...</p> <p>Approx. : Particle Filtering</p> <p><i>Undirected Graphical Models</i> <i>Markov Networks</i> <i>Conditional Random Fields</i></p>
	<p><i>Markov Decision Processes and Partially Observable MDP</i></p> <ul style="list-style-type: none"> • Value Iteration • Approx. Inference <p><i>Reinforcement Learning</i></p>

Applications of AI

Representation

Reasoning
Technique

Friday: Review Exam

- In-class
- Multiple choice
- Online using a Google Form
 - Bring a laptop/tablet/device
 - **Optional: choose an alias**
 - Email alias to jordon@cs.ubc.ca before class on Friday
- Based on CPSC 322 material
 - Logic
 - Uncertainty
 - Decision Theory
 - <https://www.cs.ubc.ca/~carenini/TEACHING/CPSC322-17S/index.html>



TODO for this week

For Fri:

- Review CPSC 322 material

For Mon:

- Read textbook 9.4
- Read textbook 9.5
 - 9.5.1 Value of a Policy