

CSCE 590-1: From Data to Decisions with Open Data: A Practical Introduction to AI

Lecture 31: Concluding Lecture

PROF. BIPLAV SRIVASTAVA, AI INSTITUTE

4TH MAY 2021

Carolinian Creed: “I will practice personal and academic integrity.”

Organization of Lecture 31

- Summary of the Course
- Evaluation and Grades
- Discussion
 - Fall 2021 course – Trusted AI
 - Ask me anything

Summary of the Course

Learning Objectives

Undergraduate students will be able to:

L1: **Identify patterns** in problems around us that can be solved with better information / insights derived from data. Example: gap in information about demand and supply.

L2: Explain opportunities, **issues related to data and tools**: (a) data meant for reuse, i.e., open data (b) data quality, (c) data integration, (d) privacy concerns and bias with data, (e) experiment design,

L3: Explain, execute and **create analytical methods to process data**: (a) unstructured data, (b) semi-structured data, (c) structured data

L4: Explain **AI methods in data analysis**: (a) Learning methods, (b) Reasoning, (c) Representation and standardization – knowledge graphs/ ontology, (d) Preferences, (e) Handling Uncertainty

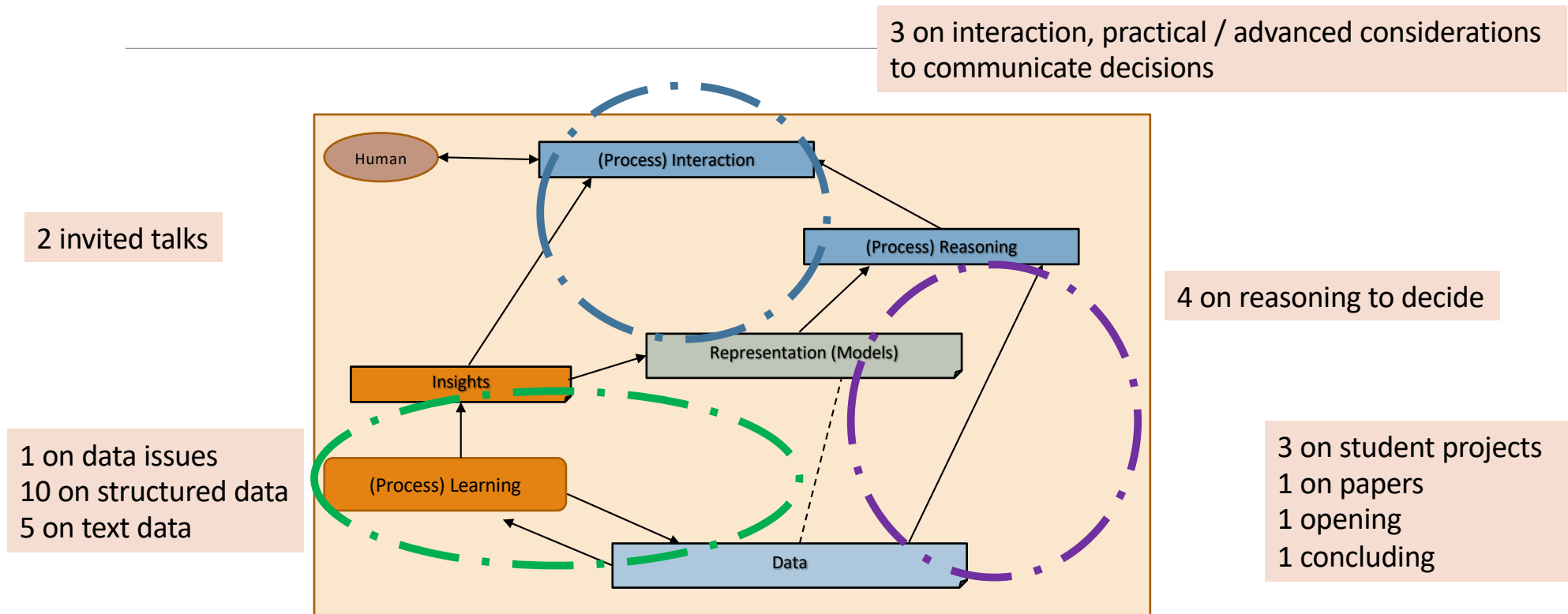
Graduate students will be able to do all of the above, and:

L5: Evaluate **gaps in analytical methods** and create new ones to process data

L6: **Explain data-driven insights to end-users** with user-oriented interfaces, provide explanations for produced output to build trust. Using interactive interfaces, like visualizations and chatbots, explain how users will be able to interact with insights and build trust in AI.

L7: Explain **research findings in open areas** and critique their contributions

Topic Distribution in Different Classes



Evaluation and Grades

Undergraduate Student Assessment

Tests	1000 points
• Course Project – report, in-class presentation	600 points
• Quiz – best of 3 from 4	200 points
• Final Exam	200 points
Total	1000 points

- Project: 50% + 10%: project report (50%) and code, for elevator presentation to class (10%)
 - Data analysis project
 - Dataset must be from given catalog
 - Use analytical methods to present new insights
- Quiz: 20%
 - 4 based on preceding lectures
- Exam: 20%
 - For undergraduate, final examination. Total 20%

Graduate Student Assessment

Tests	1000 points
• Course Project – report, in-class presentation	600 points
• Quiz – best of 3 from 4	200 points
• Final Exam – Paper summary, in-class presentation	200 points
Total	1000 points

- Project: 50% + 10%: project report (50%) and code, for elevator presentation to class (10%)
 - Data analysis project OR
 - Dataset must be from given catalog
 - Use analytical methods to present new insights
 - Create or explore new methods (preferred for graduate students) project
 - Problem to be discussed with instructor
 - Example: Analyze sound signals to estimate crowd
- Quiz: 20%
 - 4 based on preceding lectures
- Exam:
 - Research paper reading (10%) and presentation to class (10)% - Total 20%
 - Read a paper accepted at a top Data / AI conference: AAAI 2019-2021, IJCAI 2019-2021, NeurIPS 2019-2021, KDD 2019-2021, SIGMOD 2019-2021. Make a 1-page summary highlighting the key points, what you liked and what you did not. Try any code given in the paper
 - Present a 1-slide summary to class (10%)

Student Assessment

A = [900-1000]
B+ = [870-899]
B = [800-869]
C+ = [770-799]
C = [700-769]
D+ = [670-699]
D = [600-669]
F = [0-599]

Tests	1000 points
• Course Project	600 points
• Quiz	200 points
• Final Exam	200 points
Total	1000 points

Discussion

Fall 2021 Course

- CSCE 590 – Trusted AI
- <https://sites.google.com/site/biplavsrivastava/teaching/csce-590-trusted-ai>

This will be an advanced Artificial Intelligence (AI) course focused on understanding reasons why Artificial Intelligence (AI) systems can be problematic and what can be done to make them trustworthy. We will briefly cover AI as a decision support technology involving data processing, generating analysis and communicating insights to users. Then we will study how output of AI can be sensitive to issues in data, algorithmic steps (pre-, during and post-) and interaction with people of diverse background. We will conclude with techniques to remove or mitigate issues. The students will be exposed to latest tools and will do a project using AI technique of their choosing. The course will cover AI sub-fields of learning, reasoning, representation, preferences and uncertainty.

Ask Me Anything!
