DSC/CSC 482.01 Fall 2023 Syllabus

Artificial Intelligence

1. General Course Information

- Meeting Times: Monday/Wednesday/Friday, 09:00-09:50 hrs
- Meeting place: Lyon Building computer lab room 104
- Professor: Marcus Birkenkrahe
- Office: Derby Science Center room 210
- Office hours: Mon/Wed 2-3pm, Tue 4-4.45pm, Thu 9.30-10:45am
- Phone: (870) 307-7254
- Textbooks we'll be using (among others) - no need to buy:
    1. AIMA - /Artificial Intelligence - A Modern Approach (4th edition)/, by Stuart Russell and Peter Norvig, Pearson 2021.
    2. Learn AI-Assisted Python Programming - With GitHub Copilot and ChatGPT, by Leo Porter and Daniel Zingaro, Manning 2023.

2. Objectives

Artificial intelligence has been a goal of computer science (CS) since the early days of the field in the 1950s. Unlike other areas of CS, it has undergone major trend swings. Currently, AI enjoys another (its third) spring. In truth, though, AI is not just one field, but several interconnected fields. In this seminar, we will work together to identify and understand the AI subfields that are industrially relevant, and separate them from the more arcane areas that may, or may not be relevant in the near future. This special topic seminar is for everyone who is interested in AI. We will discuss algorithmic, social, philosophical, commercial and technical aspects of AI.

3. Student Learning Outcomes

Students who complete DSC 482.01 "Artificial Intelligence", will be able to:

- understand the history and importance of AI for society
- know how to solve problems in complex environments
- know how AI can be used for sales and marketing
- understand agent-based technologies for different applications
- understand the conceptual basics of machine learning techniques
- design an own application using AI principles and techniques

4. Course requirements

No prior knowledge required. Some knowledge of, and experience with algorithms is useful but not critical. Curiosity is essential. You will gain data literacy skills by taking this course. The course will prepare you for further studies in machine learning and deep learning, but also in conceptual applications of AI, like machine ethics.

5. Grading system

When	Description	Impact	Mode
Weekly	DataCamp assignments	25%	Single
TBD	Presentation	25%	Single
TBD	Session protocol	25%	Single
TBD	AI application	25%	Team

Notes:

- To pass: 60%
- DataCamp assignments: there are 16 assignments spread out over 5 courses. Each assignment contributes 1.5625% (25/16) to your final grade. Late assignments are counted as 60% complete only.
- Session protocol: every participant completes 1 protocol for the topical presentation of another participant.
- Presentation: by individual course participants on AI topics (articles and supervision from the instructor).
- AI application: a customer-focused team effort resulting in a new AI application using e.g. ChatGPT. Includes 4 Scrum sprint reviews.

6. Dates and class schedule

Week	Date	Assignments	Datacamp	Projects
1	Aug 21-Aug 25	Intro to AI		
2	Aug 28-Sep 01	AI History		
3	Sep 04-Sep 08	AI agents		
4	Sep 11-Sep 15	State-of-the-Art	Understanding AI	1st sprint review
5	Sep 18-Sep 22	Future of AI		
6	Sep 25-Sep 29	Machine Learning	Intro to ChatGPT	
7	Oct 02-Oct 06	Sales/marketing		
8	Oct 09-Oct 13	Natural Language	Understanding ML	2nd sprint review
9	Oct 16-Oct 20	Medical AI		
10	Oct 23-Oct 27	AI coding, Presentation 1		
11	Oct 30-Nov 03	Presentation 2,3,4		
12	Nov 06-Nov 10	Presentation 5,6,7	LLM Concepts	3rd sprint review
13	Nov 13-Nov 17	Presentation 8,9,10		
14	Nov 20-Nov 24	Presentation 11		
15	Nov 27-Dec 01	Presentation 12,13,14		
16	Dec 04-Dec 08	PROJECTS	Generative AI	4th sprint review

NO CLASSES: Aug 21, Oct 9 (Fall break), Nov 22 + 24 (Thanksgiving) see 2023-2024 academic calendar for Lyon College.

7. Lyon College Standard Policies (Fall 2023)

Online: https://tinyurl.com/LyonPolicyF23, see also Class Attendance

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