Technology & Visual Arts

Artificial Intelligence – Infrastructure and Architecture

23W AI Infrastructure and Arch. - 01 AIDI1006-23W-20938

23W AI Infrastructure and Arch. - 02 AIDI1006-23W-20939

Mondays / Tuesdays, 5:00 – 7:45 PM ET

Updated: 2023-01-23

Course Description:

Working alone or in a small team, students research, design, develop and implement applied Computational Artificial Intelligence Infrastructures to satisfy a real organizational need. Students are expected to apply all their knowledge and skills to produce all the assignments, along with a functioning prototype of their project idea. Developing the technical skills and applying all the resources and features required to deliver an Enterprise AI end-to-end solution.

As we have transitioned to remote and online learning, our goal is to ensure that students achieve the learning outcomes of this course. During this time, academic integrity remains a priority and students are responsible for being aware of and demonstrating behavior that is honest and ethical in their academic work. While we need to change our delivery mode, students are still expected to take responsibility for their own academic work, adhering to integrity standards for themselves but also encouraging and cultivating a culture of integrity among their classmates. If you are unsure, please refer to the Georgian College academic integrity policy.

Resources:

No textbooks are required. Study resources are available via Blackboard. Independent research and discovery initiatives are components of the course.
Some important resources will be used through the course like:

- Cloud accounts: Azure / AWS / GCP (using student-free accounts)
- Microsoft Official Training Materials
- Amazon AWS Official Training Materials
- Google Official Training Materials
- Additional books and technical references
- Videos with the newest technologies/features

Instructor:

Name: Caio Gasparine
Email: Caio.Gasparine@GerorgianCollege.ca

Office: Remote

Office Hours:

Please use the Office Hours posted on Blackboard to book time with me OR e-mail me at Caio.Gasparine@GeorgianCollege.ca

Expectations for Success:

To be successful in this course, you need to:

- attend lessons regularly,
- ask for help when you need it, and
- strive to complete all work to the best of your ability within the required time frames.

Courses at the post-graduate level require a minimum grade of 60% to fulfill graduation requirements. Please refer to the ***Georgian College Academic Policies and Procedures***, available at http://www.georgiancollege.ca/admissions/policies-procedures

Evaluation:

Exercise or Assessment	Course Weighting
6 x Assignments	50%
2 x Exams	40%
7 x Challenges	10%

Assignments will be based on all the content and knowledge shared in class and can be submitted individually or in groups (max 2 members).

ZERO tolerance for late assignment submissions.

Exams are individual and will be composed of 20 questions where the student will be asked to answer them with their own words with a short answer **OR** choose between multiple alternatives as a correct answer.

Attendance is NOT mandatory. A grade will be assessed using the KICA Rubric.

Grades for groups will apply equally to each member subject to an assessment by the instructor of member participation and contribution to the assignment.

Students must inform the instructor in advance if they think they will not meet a deadline. Please refer to the ***Georgian College Academic Regulations, Rights, and Responsibilities***, available at http://cat.georgiancollege.ca/academic-regulations/rights-responsibilities/.

Schedule of Activities:

WEEK	DATE	LESSONS AND READINGS	ASSIGNMENT / EXAM	POINTS
1	Jan 9-10	Introduction		
2		Intro / AI Function / Enablers		
3		Infra and Architecture / On-prem vs. Cloud / CSPs		
4		Data Pipeline / Processes / Framework / AutoML	#1 Image Classifier	5
5		Data Pipeline / Processes / Framework / AutoML		
6		More Data / SSIS / ADF / Data Quality	#2 Machine Learning Studio	10
7		Azure services – Intro **EXAM 1 [20 points]**		
		READING WEEK	**NO CLASSES**	
8		Azure services – Cognitive Services 1		
9		Azure services – Cognitive Services 2	#3 Draw your own Architecture	5
10		Azure services – Cognitive Services 3		
11		Azure services – Cognitive Services 4	#4 Azure data pipeline	10
12		AWS Academy – Cloud Foundations		
13		AWS Academy – Machine Learning	#5 AWS Academy – Cloud	10
14	Apr 17-18	Enterprise Architecture **EXAM 2 [20 points]**	#6 AWS Academy – Machine Learning	10
		Challenges will be assigned during the course duration and represent 10% of the final grade		10
			TOTAL ASSIGN >	**60**
			TOTAL EXAMS >	**40**

To support access to course content, lectures and learning activities may be recorded and the links to these resources posted on Blackboard / MS Teams.

Recordings should primarily capture the faculty (myself) and on-screen content. It is possible that your image, voice, name, personal views, and coursework may be collected. If you have concerns with recording, it is suggested that you keep your video/microphone off and do not use a profile image. You can communicate via direct message with your faculty/me instead of group chat.

Recordings may not be reproduced, posted, or shared anywhere and may be in violation and subject to disciplinary actions under Georgian College's Student Code of Conduct. Recordings should only be used by students currently registered in this course.

Students creating unauthorized recordings may be in violation and subject to disciplinary actions under Georgian College's Student Code of Conduct.