DATA 5000 Data Science Seminar
Carleton University, Fall 2023
Monday 11:35-14:25, Southam Hall, Room: 311
Instructor: Dr. Mahmud Hasan (mahmudhasan@cunet.carleton.ca)

Course information:
Course Website: https://brightspace.carleton.ca/d2l/home/208303
Brightspace access for University of Ottawa Students; please see information here:
https://gradstudents.carleton.ca/faculty-of-graduate-and-postdoctoral-affairs-access-to-brightspace/
For information about Carleton’s academic year, including registration and withdrawal dates, see Carleton’s Academic Calendar.
Teaching Assistant: N/A

Calendar Description: Cloud based distributed systems, statistics, machine learning, use of complex ecosystems of tools and platforms, data ethics, and communication skills to explain advanced analytics. Students choose a project in Big Data management and/or analysis, deliver a paper and give a class presentation on their findings.

Materials and Software:
- There is no particular textbook required for this course. Recommended references will be announced in Brightspace.
- Data science concepts are explained using the R language. RStudio is recommended. (https://posit.co/download/rstudio-desktop/)

Communications and Office Hours:
Emails can be sent to the instructor. The standard response time is one business day. An online/in-person appointment can be scheduled when it is necessary.

Grade Distribution:
- In-Class Participation (attendance and peer evaluation) 10%
- Project Proposal (due Oct. 04) 10%
- Paper Presentation (Oct. 30) 10%
- Project Presentation (Dec. 04) 10%
- Project Poster Presentation (Dec. 08) 10%
- Final Project Report (due Dec. 11) 50%
Attendance:

At least 80% attendance is required to continue this course. Exceptional circumstances should be reported immediately by an email. The instructor may ask for a doctor’s note when a medical issue is reported. In-class participation includes attendance (8%) and peer evaluation (2%).

Brightspace LMS:

This course is managed through the Brightspace LMS. All course materials and announcements will be posted in Brightspace. Students are responsible for keeping themselves updated. For a training, please contact TLS or visit https://carleton.ca/brightspace/training/.

Project:

The most important part of this course is the project. Each student is required to perform an individual project using data science tools. A step-by-step guideline will be provided.

Paper Presentation:

Each student is required to choose a technical paper for oral presentation. The instructor prepares a list of eligible papers.

Tentative Schedule

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Topics/Activities</th>
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<tbody>
<tr>
<td>Lecture 01</td>
<td>• Course Introduction</td>
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<tr>
<td>Sept. 11</td>
<td>• What is Data Science?/ Introduction to R</td>
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<tr>
<td>Lecture 02</td>
<td>• Working with Data</td>
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<td>Sept. 18</td>
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<td>Lecture 03</td>
<td>• Visualization and Exploration</td>
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<td>Sept. 25</td>
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<tr>
<td>Lecture 04</td>
<td>Oct. 02</td>
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<tr>
<td>No Lecture</td>
<td>Oct. 09</td>
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<tr>
<td>Lecture 05</td>
<td>Oct. 16</td>
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<td>Lecture 06</td>
<td>Oct. 30</td>
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<td>Lecture 07</td>
<td>Nov. 06</td>
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<td>Lecture 08</td>
<td>Nov. 13</td>
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<td>Lecture 09</td>
<td>Nov. 20</td>
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<td>Lecture 10</td>
<td>Nov. 27</td>
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<tr>
<td>Lecture 11</td>
<td>Dec. 04</td>
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<td>Lecture 12</td>
<td>Dec. 08 (Friday)</td>
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Graduate Academic Advisors:

The Graduate Advisors for the School of Computer Science are available in Room 5302 HP; or by email at grad.scs@carleton.ca. The graduate advisors can assist with understanding your academic audit and the remaining courses required to meet graduation requirements.

SCS Computer Laboratory:

Students taking a COMP course can access the SCS computer labs. The lab schedule and location can be found at: https://carleton.ca/scs/tech-support/computer-laboratories/. All SCS computer lab and technical support information can be found at: https://carleton.ca/scs/tech-support/. Technical support staff may be contacted in-person or virtually, see this page for details: https://carleton.ca/scs/tech-support/contact-it-support/.

University Policies

Academic Accommodation:

Carleton has policies that deal with accommodation to permit study on the basis of human rights. Information and resources for students needing academic accommodation due to religious observance, pregnancy, or disability are provided by Equity Services. Visit https://students.carleton.ca/services/accommodation/ for more details. As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and survivors are supported through academic accommodations as per Carleton’s Sexual Violence Policy. For more information, visit: https://carleton.ca/equity/focus/sexual-violence-prevention-survivor-support/.

Academic Integrity:

Student Academic Integrity Policy. Every student should be familiar with the Carleton University Student Academic Integrity policy. A student found in violation of academic integrity standards may be sanctioned with penalties which range from a reprimand to receiving a grade of F in the course, or even being suspended or expelled from the University. Examples of punishable offences include plagiarism and unauthorized collaboration. Any such reported offences will be reviewed by the office of the Dean of Science. More information on this policy may be found on the ODS Academic Integrity page: https://carleton.ca/registrar/academic-integrity/.

Plagiarism. As defined by Senate, ”plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one’s own”. Such reported offences will be reviewed by the office of the Dean of Science. More information and standard sanction guide-
Unauthorized Collaboration. Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis".

COVID-19 Policies and Updates:

Please check the following link: