

CSC 490/2600: Artificial intelligence in clinical medicine

Instructor: Frank Rudzicz

Lectures: MWF 10h–11h, LA 241

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This is an intensive introduction to AI applied to issues in medical diagnosis, therapy selection, monitoring, and learning from health data. It will briefly cover the healthcare industry in Canada, electronic medical records, and ethical/security concerns. It will go into more depth into language and video processing, and machine learning. The course will be project-based and students have considerable flexibility in defining their projects.

Evaluation policies

Students will be marked on two quizzes, participation, and a final report and presentation. The relative proportions of these marks are as follows:

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|-------------------------------|----------------------|----------------------|-----|-----|-----|------|
| Two quizzes (indiv., 5% each) | | | | | | 10% |
| Participation (indiv.) | | | | | | 5% |
| Project (team) | Oral | | | | 10% | 85% |
| | Report | Data analytics | 15% | 90% | | |
| | | Code | 15% | | | |
| | | Experiments/analysis | 30% | | | |
| | | Literature review | 15% | | | |
| | | Technical quality | 15% | | | |
| | Overall presentation | 10% | | | | |
| | | | | | | 100% |

Academic offenses

No *unauthorized* collaboration on the projects is permitted. The work you submit must be your team's own. 'Collaboration' in this context includes but is not limited to sharing of source code and correction of another's source code. Reporting fraudulent experimental results is, as should be obvious, also unacceptable. Failure to observe this policy is an academic offence, carrying a penalty ranging from a zero on the project to suspension from the University. See the academic integrity page of the University of Toronto at <http://www.utoronto.ca/academicintegrity/academicoffenses.html>.

Planned topics

- The healthcare industry
- Electronic medical records
- Clinical decision support systems
- Machine learning for natural language
- Machine learning for vision
- Human-computer interaction
- Bioethics and challenges to deployment

Planned course calendar

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|--------------|-----------------------------------|
| 16 September | First lecture |
| 25 September | Last day to add CSC 490 |
| 26 September | Last day to add CSC 2600 |
| 30 September | Quiz 1 |
| 10 October | Thanksgiving (no classes) |
| 14 October | Quiz 2 |
| 31 October | Last day to drop CSC 2600 |
| 7 November | Last day to drop CSC 490 |
| 9 December | Last lecture and final report due |
| | See course website for details. |