Overview

Welcome to **ECE324 – Machine Intelligence, Software, and Neural Networks!** This course serves as an introduction to machine learning engineering, with a focus on neural networks. The entire process of developing a machine learning solution, from data collection to software development, as well as ethics in machine learning, will be discussed. Practical techniques in machine learning will be covered, including data augmentation and the use of pre-trained networks. Topics covered will include the fundamentals of neural networks, convolutional neural networks, recurrent neural networks, generative adversarial networks and transformer networks. Students will complete a major hands-on project in machine learning.

Website & Forum

Website: `https://www.cs.toronto.edu/~guerzhoy/324/`

Forum: `https://piazza.com/utoronto.ca/ece324/`

All course handouts will be posted on the course website. *Students are responsible for reading all announcements on the course forum on Piazza.*

Instructor

Instructor	**Email**	**Office**	**Office Hours**
Michael Guerzhoy	`guerzhoy@cs.toronto.edu`	TBA	TBA

Grading

The grading scheme for the course is as follows. The grading scheme is tentative, and subject to change up to the end of the first week of classes.

	Worth	Date
Mini-Projects	25%	3 Mini-projects, due tentatively Feb. 4, March 18, April 2
Project proposal	5%	Jan. 28
Interim project report	5%	Feb. 28
Project presentation	10%	last two weeks of class
Project writep	25%	April 14
Midterm	30%	March. 4

References

The following textbooks are not required, but you may find them useful as additional references.

- I. Goodfellow, Y. Bengio, A. Courville, *Deep Learning*. Available for free at `https://www.deeplearningbook.org/`.
- S. Barocas, M. Hardt, A. Narayanan, *Fairness in Machine Learning: Limitations and Opportunities*. Available for free at `https://fairmlbook.org/`.
- H. Daume III, *A Course In Machine Learning*. Available for free at `http://ciml.info/`.
- C. Bishop, *Machine Learning and Pattern Recognition*. Available for free at `https://www.microsoft.com/en-us/research/people/cmbishop/prml-book/`.