

# CSC2523: Deep Learning in Computer Vision Introduction

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UNIVERSITY OF  
TORONTO

- **Instructor:**



Sanja Fidler (`fidler@cs.toronto.edu`)

- **Office:** 283B in Pratt
- **Office hours:** Send email for appointment

- **Class time:** Tue at 9am-11am (??)
- **Location:** ES B149
- **Class Website:**  
<http://www.cs.toronto.edu/~fidler/teaching/2015/CSC2523.html>
- The class will use Piazza for **announcements** and **discussions**:  
[piazza.com/utoronto.ca/winter2016/csc2523/home](http://piazza.com/utoronto.ca/winter2016/csc2523/home)
- Your grade will **not depend on your participation on Piazza**

# Course Prerequisites

## Good to know:

- Basics of Neural Networks

Otherwise you'll need some reading

# Requirements and Grading

- This course is a seminar course. We'll be reading papers on diverse applications of NNs with focus on computer vision. Thus, how much you learn greatly depends on how prepared everyone comes to class.
- Each student expected to write short reviews of two papers we'll be reading each week, present a paper, and do a project
- **Grading**
  - Participation (attendance, participation in discussions, reviews): 15%
  - Presentation (presentation of papers in class): 25%
  - Project (proposal, final report): 60%
- **Project:**
  - Topics will be posted sometime this week (you can also come up with your own topic)
  - Need to hand in a **report** and do an oral **presentation**
  - Can work **individually** or in **pairs**

# Term Work Dates

<b>Term Work</b>	<b>Due Date</b>
Reviews	one day before class (Mondays)
Project Proposal	Feb 22
Project Report	mid April
Project Presentation	mid April

- All dates are for 2016. ;)

**Deadline** Reviews / project should be submitted **by 11.59pm on the date they are due**. Anything from 1 minute late to 24 hours will count as **one late day**.

**Lateness** Each student will be given a total of **3 free late days**. **After you have used the 3 day budget, each late day will have a 10% penalty**.

**Discount** You have a budget of 1 missing review without penalty. You do not need to do reviews for the week you present.

We will have a few invited lectures

- Geoff Hinton on Frontiers of Deep Learning
- Raquel Urtasun: Deep Structured Models
- Yuri Burda: Variational Autoencoders
- Yukun Zhu: Convolutional Neural Networks
- Ryan Kiros: Recurrent Neural Networks and Neural Language Models
- Jimmy Ba: Neural Programming
- Elman Mansimov: Image Generation, Attention
- Renjie Liao: Highway and Residual Networks



We have students with NN expertise in class

- Shenlong Wang: Semantic Segmentation
- Mengye Ren: Question-Answering
- Emilio Parisotto: Reinforcement Learning
- Lluís Castrejon: Transfer Learning, or Knowledge Bases
- Kaustav Kundu: (RGB-D) Object Detection
- Min Bai: Optical Flow / Stereo

- Computer Vision will be our running application, but the class is not limited to this
- Possible applications:
  - Robotics
  - Graphics
  - NLP
  - AI
  - Social Networks
  - Computational Biology
  - Algorithms
- Theory?