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**ECE 1786**

**Creative Applications of  
Natural Language Processing**

Lecture 4 Part 2: Project Structure



# Projects are Engineering

- I believe that the way to learn is to **do!**
- Assignments provide basics
- In project you navigate the use of NLP-based neural networks
- Includes oral/written communication
  - What, why, how, and results
- Also: something to talk about in job interview and link to on CV/linkedin  
<https://www.eecg.utoronto.ca/~jayar/ce324/2020/projects.html>



# Project Rules

- Done in Groups of 2
- Topic of your own choosing
  - must relate to Natural Language Processing & the material covered in this course
  - must be approved by instructor
- *Likely* be an application of NLP
  - should discuss more if a research project on NLP itself
- Projects in the Class should be different from each other
  - If too similar, won't pass approval-in-principle
- Must collect and/or label some of your own data
  - Because data is a core part of the field, perhaps hardest
  - Must be careful not to do too much



# Project Rules, cont'd

- You should use good software development practices
  - Modular code; good names; comments
  - Source code control – aka git
  - Will post a lecture on Source Code control using Git
  
- We will create a Github repository for each team
  - you must use to store, revise and submit your project
  - Required to submit for progress report and final report, but should use the whole time



# Project Timeline and Deliverables

Date	Item
04-Oct-22	Project Discussion in Class (Today)
11-Oct-22	Team Forming Deadline – send names/emails to instructor
27-Oct-22	Approval-in-Principle of Project Topic done
31-Oct-22	Project Proposal Document Due
31-Oct-22	Project Proposal Slides Due
01-Nov-22	In-Class Proposal Presentations + <b>Extra Class in Evening</b>
21-Nov	Progress Report Due
05-Dec	Final Presentation Slides Due
06-Dec-22	Final Presentations - <b>Extra Class in Evening</b>
13-Dec-22	Final Report Due



# Step 1: Form Team

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- Find someone compatible with you
  - on kind of topics interested in
  - on working and communication style
- See 'find partner' post on Piazza – pinned at top
- Should do soon, deadline October 11



# Send Me Team Info When Formed

- Send email to me:
  - [Jonathan.Rose@ece.utoronto.ca](mailto:Jonathan.Rose@ece.utoronto.ca)
  - Copy email to both group members
  - this a formal commitment
- The email **must** contain (**please do this**):
  - Names of all students and student numbers
  - UofT email address of all members (or otherwise if external)
  - Department & Field of each group member
  - Degree being pursued by each group member (M.Eng, M.A.Sc., Ph.D., MSaC etc.)
  - If you are a part-time or full-time student
- I need this to organize the tracking of teams and projects



# Where to find Topics

1. From yourselves! Something you are interested in.
  2. May have a set of curated topics
    - Just sending out a call for projects to University
    - See: <https://www.eecg.utoronto.ca/~jayar/ece1786.2022/>
    - Stay tuned
  3. Look at projects on the internet
    - e.g. Stanford CS 224n Natural Language Processing with Deep Learning
    - <https://web.stanford.edu/class/cs224n/project.html>
- Of course UofT rules on plagiarism apply
  - Don't collaborate with another team on topic-finding



# Scope – How Big Should the Project Be?

- A very difficult question to answer
  - Experience helps, but how to get it?
  - Break idea into pieces, estimate time to do
  - Pay attention to your estimates as you go
- Suggest creating layers of goals
  - Make sure some are achievable
- How much time do you have on project?
  - Two months, minus your other courses & Assignments in this course
- Myself & TAs will be available to discuss



# Help from Myself and TAs

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- With Proposal & Scope
  - Send me email with questions
  
  - New: Weekly Office Hour
    - Fridays 1-2pm
    - Engineering Annex, Room 319
- <https://map.utoronto.ca/?id=1809#!m/494468>



# Approval In-Principle

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- Get together with partner to discuss topic ideas.
- Once you've settled on one, write up as follows:



# Request for Approval-in-Principle email

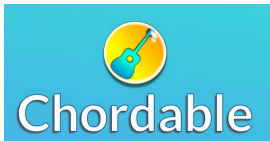
- 1. What & Why:** 2-3 sentences that describe what the project is and how it is motivated. (Not **How**)
- 2. Data Source:** Your initial thoughts on where you will find relevant data, and what role you plan to take in the collection/labelling
- 3. Name:** Give your Project a Name
  - name should convey the essence of project; used for tracking
  - Creates your group identity! Logos also welcomed!



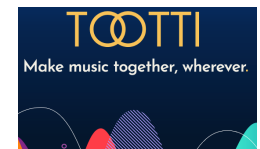
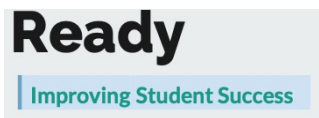
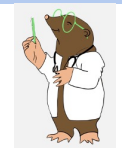
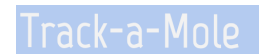


# ECE 1778:

# Creative Applications for Mobile Devices



Lecture 13  
April 14, 2021



# How to Describe Your Topic?

- Key is to say **what & why**

- engineers tend to think about **how** too soon, be warned
- You will need to think about how to make the **what feasible**, but not in first description for someone else to understand

- Should be the completion of this sentence:

**“The goal of our project is to ...”**



# Grading

Item	Portion of Course Grade
Proposal (Presentation/Document)	10%
Interim Report	10%
Final Presentation	10%
Peer Reviews	5%
Final Report/Software	25%
Total	60%



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# Project Proposal Document





# Proposal Document

Document **must** have the Following sections:

## 1. Introduction

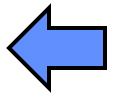
- What and why (i.e. motivation)

## 2. Background

- Describe 2-3 related papers you've found

## 3. Source of Data and Processing

- Where will you get the data for part of project?
- Requirement: some collection/labeling the data
  - But can't take up a big chunk of the project either



# Proposal Document, cont'd

## 4. Architecture of the model

- Rough guesses of type and structure of model
- Describe other parts of software that are involved if any

## 5. Baseline Model

- Describe a simple baseline model that you'll compare against
- Good practice to always start simple
- Could be a hand-coded heuristic



# Proposal Document, cont'd

## 6. Plan

- Discuss how you're going to work together
  - Especially important if you don't know each other well
- List of sub-tasks
- Your guess as to how much time each task will take
- Use to create estimate of end-to-end time

## 7. Risks

- Predict what might go wrong & how you'd recover

- Document also graded on structure, grammar and mechanics



# Proposal Document, cont'd

- Hard Limit of 1200 words total
  - Doesn't count pictures or references
  - 1% penalty for every word in excess of 1200
  - Put word count and compute penalty on front cover of proposal
    - These words (the count & penalty) not included in count
- Due Monday October 31 at 9pm.
- Upload under Assignment – Project Proposal Document
  - Just one per group; Quercus will know your group
  - (Be sure to respond to my email request for a name)



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# Proposal Presentations

November 1, 2022



# Proposal Presentation

Similar structure **but not same** as Document:

1. Introduction and Illustration
2. Data Collection and Processing
3. Architecture and Baseline
4. Risks
5. What You'll Have completed by November 21
  - At progress report time
  - Giving you a target to shoot at that **is not** the end



# Proposal Presentation

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- **4 minutes maximum to present**
  - **Timer** will be set & presentation ended at 4 mins.
  - 8 Slides **maximum** (including title slide)
  - Font size **minimum** 20
- This is difficult: must choose essential messages
- Urge you to practice the talk 2-3 times
  - Make sure you make sense to yourself and team
  - All team members must speak, roughly equally



# Slides Due

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- Slides due **Monday October 31 at 9pm**
  - Uploaded to Quercus 'Assignment' Proposal Presentation
  - Must be either **powerpoint (pptx or ppt)** or **PDF**
  - No google doc web links, must convert to pdf/ppt





# Proposal Presentation

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- I will put up the schedule of which team is presenting in which time slot
- Two possible times to present, on Tuesday Nov 1:
  - During Regular Class: 10am-12 noon
  - Extra Evening Class: 6:30pm-8:30pm Location TBD.



# Peer Review of Proposals/Presentations

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- You will be asked to review another group's document and presentation
- You'll be scheduled to do that in the opposite time period.



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# Questions?

