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CORNELL NYC TECH

Knowledge • 0 teams

Cornell Tech CS5785 2015 Fall Final *preview*

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Competition leaderboard, discussions and stats

This competition is used for the final of Cornell Tech CS5785 Applied Machine Learning in Fall 2015

About The Exam

The format of the exam is a mock peer-reviewed conference. You will develop an algorithm, prepare a professional paper, submit an anonymized version to the EasyChair conference system, and peer-review the work of your classmates. There are three deliverables:

- Develop your algorithm and submit your results to the Kaggle leaderboard. **Deadline: Friday, Dec 4, 2:30 PM EST.**

- Write your paper submission and submit to EasyChair using your Program Committee account in the Author role. **Deadline: Friday, Dec 4, 2:30 PM EST**. There should be only one submission from each team.

- Peer-review your classmate's papers! Submit them via EasyChair using your Program Committee account. **Deadline: Sunday, Dec 6, 2:30 PM EST**. (Will open after Friday) *Everybody* on each team must log in and complete their peer reviews. (They are not "per-team")

The Challenge

You are a spy working for the National Security Agency. We understand that your team of **two to three Cornell Tech students** are among the most experienced agents on the Cyber-Machine Learning Force, and we have an important assignment for you.

Our colleagues at Project S.U.N have uncovered a treasure trove of surveillance footage from webcams taken all over the globe, but we need your help to categorize this vast

amount of data to help further the NSA's goals. Your mission is to **classify each webcam shot** to determine what the camera is looking at (swamp, bus, gas_station, etc). Use all of your skills, tools, and experience to help you develop a Secret Algorithm that outputs a classification label. When you are finished, submit your results to the Kaggle leaderboard and send your complete writeup to EasyChair.

A wealth of metadata is available about each shot:

- **Image data**, in the form of a JPEG file for each webcam shot;

    - Deep-learned **image feature data** from our comrades in the A.L.E.X.N.E.T. Deep Cyber-Learning Squad, which provide feature vectors from a convolutional neural network trained specifically to identify objects.
    - Hand-tuned **image feature data**: these are bag-of-visual-word SIFT descriptors in a spatial pyramid, representing close-to state-of-the-art object detection and classification performance for image features of this kind.

- **Attribute data,** in the form of binary attribute vectors that indicate the presence or absence of certain key aspects of the image ("symmetrical," "open area", "horizon", etc)

Further, there is a separate dataset containing similar images and five captions to go with each image. These captions were typed by secret agents present at each scene. However, the images are not the same as the ones in the training or testing set for this challenge. Some teams who pursue unsupervised or semi-supervised learning strategies may find the extra data and the image captions helpful.

The data you use --- and the way you use this data --- is completely up to you.

The best Spy Teams (of **two to three Cornell Tech students**, recall) might use visualization techniques, dimensionality reduction, preprocessing, supervised and/or unsupervised learning to best understand how to best take advantage of each data source available to them.

Their report will be professionally written, because it was created by the sharpest spy minds that America has ever seen. It will describe their data pipeline in detail, including motivations for which data is used and why. It will contain a detailed Experiment section and a Results section. If the best Spy Team has time to write a background section, it will point out the relevant state-of-the-art in the scene classification literature. Remember to include your team name on Kaggle so we know who you are.

The report should be written according to a professional style adopted by a major academic conference. NIPS is a good choice. Spies can download a template from Section 4 Paper Format of the NIPS Author Guidelines. We recommend you to use LaTeX template but Word template is also acceptable.

Peer reviews written by the best Spy Teams will be detailed and thorough, pointing out potential areas of improvement as well as complimenting their peers' strengths.

The best Spy Teams understand how to divide the precious time and energy among all members of the group. They will split into roles, so spies who are good at programming will not spend valuable spy resources messing up the team's writing and vice versa. Intense contact is always maintained between team members. When hardship happens

within the best spy team, blame is not assigned---it is overcome.

May the best Spy Team win.

-- Agent Belongie

Rules

You are strongly encouraged to work in groups of two or three students.

Groups may not collaborate with other groups, even with citations. This includes sharing data, results, writing, or discussing with other groups. You **may not** view reports from other teams until **after** the peer-review phase begins!

How to anonymize your paper

A good spy always knows how to stay undercover.

The second "Peer Review" phase should be double-blind. This means authors will not know who the reviewers are, and the reviewers should not know who the authors are.

To maintain anonymity, **don'**t include team member names in the actual paper that you submit to EasyChair!

However, **do** indicate all team member names as authors on the EasyChair web page when you submit your paper! This will be hidden from your reviewers.
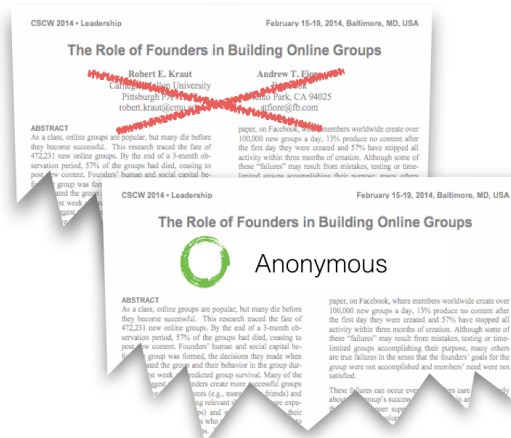

Peer Review Tips

See the following resources for tips on how to write a professional review:

- Matthew Might's notes on how to peer review and Peer Fortress: The Scientific Battlefield (the last one provides examples NOT to follow)
- CVPR 2016 Reviewer's Guidelines.
- So You're a Program Committee Member Now: On Excellence in Reviews

How to submit your paper to EasyChair

Every agent should have an email in their Cornell inbox containing a link to sign into EasyChair as a program committee member.

To submit the assignment, the team leader should log into EasyChair and switch to the Author role using the "Change Role" menu option on the top right:
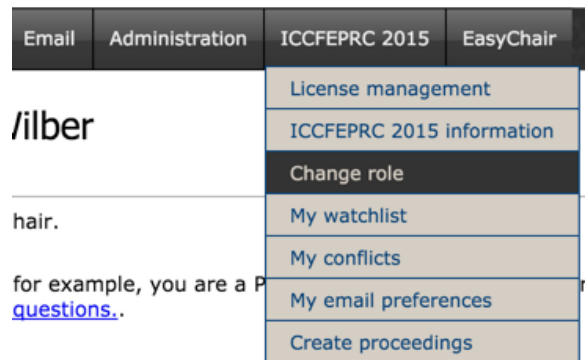
From there, the author can start a new submission using the menu on the top left. Be sure to put team members on the web page rather than on the paper PDF itself (see "Staying Under Cover" above). You can come back and change your submission any time before the deadline.

Score Breakdown

- 30% on Kaggle performance (classification accuracy on the private test set)
- 30% on method: does it make sense? is it suited to the task? is it creative?

- 30% on report: is the proposed method clearly described? is it professionally written? does it include enough detail for a professional (ie. skilled graduate student) to re-implement the results? A good report should at least contain a brief introduction of what you did, a detailed description of your method, an experimental evaluation part that shows the experimental results and analysis of your results.
- 10% on the quality of peer review: is it well-written and thoughtful? does it provide insight to the authors?

Ends: 2:30 pm, Friday 4 December 2015 UTC
Points: this competition does not award ranking points
Tiers: this competition does not count towards tiers

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