CSCE420: Introduction to Artificial Intelligence Communication Project

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Introduction

This is an assignment in which the primary skill being assessed is your ability to communicate. Communicating technical aspects of what you have learned is a vital ability. I can promise you that it will stand you in good stead for your whole life.

Assignment Overview: Think about a technical problem and solution that incorporates Artificial Intelligence methods, and then record a brief video covering the main features of the topic. If possible, you should pick something already of interest to you, for example: AI for chatbots, AI in one of your favorite games (e.g., poker playing agents, the AI in starcraft), Wall Street trading, ethics questions in AI, *etc.*

Teams of up to three students are permitted. In these cases, the video will be graded as a group effort, so incorporate input (and possibly also actual speaking) from each team member.

Topic

You have a very wide choice of topic. Anything that is of particular interest to you that has been covered in the course, is covered in the textbook, or can be shown to relate in a technical way, is a fair choice for a topic. Your could focus on one of the papers that has been discussed in class, or follow up on one of the papers cited therein. However, note that an important part of what you will be expected to communicate is the problem statement. Do not assume that you can skip over the motivation for the problem: the audience for your talk may understand AI but may know little about the problem, or even understand what it entails. It is up to you to convince them of the importance of the problem and to illustrate the problem in an accessible way.

It is important that the topic actually relate to AI problems, other approaches, or philosophy in non-trivial way. The one purpose of your video is to emphasize this relationship.

The assignment

The aim of your communication project is to describe a technical problem and an AI-based solution to that problem to a public audience. You have freedom in the scope of the problem, and the level of detail described, but you should choose wisely. A good model of a potential reader is an intelligent but uninformed person who may have heard of the terms "Artificial Intelligence" but may not be intimately familiar with notation or specialized details of particular algorithms. Thus, you should limit use of jargon or specialist language where possible. You can choose to have the video have a serious tone, or a more whimsical style can also be used—especially if you think it might be more engaging.

This is a difficult project, which is one of the reasons this is included in the course. So you will want to consider using more than plain prose. Images can be used to great effect to explain particular instances of the problems. So put some time into thinking about supporting figures or animations.

Here is an example of an excellent, fun, educational video (on a mathematical topic, although not on an AI topic) which might inspire you: *Hexaflexagons*: `http://youtu.be/VIVIegSt81k`

Here are some previous submissions for the course. They vary in quality:

F.E.A.R. Game AI (Joanne Bruno and Sara Fox)

    `https://www.youtube.com/watch?v=-T5SWC4Vg50`

Automatic Speech Recognition with Hidden Markov Models (Hira Chaudhary)

    `https://youtu.be/i10mkVUKf0w`

AI in Mobile Systems (Angel Lozano)

    `https://vimeo.com/146889783`

How does a computer play chess? (Kevin Shell)

    `https://youtu.be/tk4yW2nCc5Y`

Navigation in Realtime Strategy Games (Garrett Witowski and Kyle Wahl)

    `https://youtu.be/UgW3MpWXOzQ`

Training your cooking robot (Eric Cochrane)

    `https://youtu.be/bFDymzWzLAM`

Clustering–DBSCAN (Steven Bierwagen)

    `https://youtu.be/5E097ZLE9Sg`

Self-Driving Cars (Steven Snow and Chris Martin)

    `https://www.youtube.com/watch?v=WEqk2kljo9w&feature=youtu.be`

You do not have to submit a written report. All that is needed is to post a link to a video.

Evaluation

Because submissions to communications projects involve a great variety of creative thought, demonstrate artistic expression, and differ so widely, no single rubric with checkboxes does them all justice. However, these are some questions that I consider when grading the project:

1. Is there a clear motivation of a problem being solved by AI?

2. Are the ideas that fall within the purview of AI identified?

3. Is every statement technically correct?

4. Does the project have a good introduction, middle, and conclusion?

5. Have the contributions been positioned appropriately historically? *e.g.*, are the researchers who developed the idea identified?

6. Are visuals of high quality? Do they complement or expand understanding?

7. Are broader societal implications (*e.g.*, ethics) considered in the presentation?

8. Is it especially novel, humorous, entertaining, provocative, and/or engaging?

Some resources

You might try google oppia, a tool for making interactive online educational activities called "explorations." It is available at `https://www.oppia.org/` and `http://code.google.com/p/oppia/`

Submission

You should submit a video (*i.e.,* via a link to a hosting site like youtube) that is between 2 to 5 minutes.

The video is due at 11:59pm on 21 November 2019.