



FourthBrain

Student Project Proposal

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|-------------------------------|---------------------------|
| Project Title | Insert ads into the movie |
| Industry Sponsorship (if Any) | None |

Project Description

Problem definition

[50-100 word description of the problem which you will solve]

Many advertisers desire to get more exposure. One of the ways is to get their ads appear in the movie as part of the scene for example blended on surface of a tall building like what we saw in the Blade Runner.

Key Research Questions/ Technological constraints that the Project will Answer

1. Insert ads in a nonintrusive way
2. Automate ads insertion
3. Insert ads based on geography, demographics or personal preferences

Final deliverables at the end of the project

[Please list the desired technical deliverables from the project team in as much detail as possible]



1. Python code that will enable insertion of an ad into one frame
2. Trained model
3. Training data set

Key activities/ technologies the project team may be expected to undertake/ work with

[E.g. What kind of technology stack will you work with, the datasets you may need to work on, what kind of analysis you may be expected to undertake, etc.]

I will work with object detection , computer vision and machine learning

Expected learning outcomes

[What do you expect to learn from the project? Please mention the technical skills you will imbibe over the project.]

1. I will learn how to detect buildings
2. I will learn how blend a picture of an ad intothe building surface
3. I will learn to work with ML technology

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|---------------|----------------|
| Team Size: | 1 |
| Member names: | Dragan Ostojic |



Tentative Time plan

Submit a tentative time plan (table/chart or text) regarding breakdown of the work that will be conducted between in the second half of your cohort, from week 6 onward.

I don't know how will this proceed because I am new to ML. I will come up with the plan as I go forward.

System Design

From the System design perspective, outline the following:

- Data
- Process (Models, iterations)
- Outcome (output and recommendations)

What are the system design considerations for your deployable ML model? Describe the iterations, delivery formats and limitations you may face and some solutions to overcome the limitations

- Should the model be deployed to run in batch, or to be hit from an api or some sort of streaming process as events are generated?
- What sort of infrastructure will be required for training? If it is a model that requires a lot of resources, where is the best place to train?

System design:

Data will come from a public source of street view pictures of the buildings that are labeled. I am not sure where I will get the data yet. My backup plan is to generate the data set myself. I don't know about what model to choose yet. I expect that the model should be able to do model detection from a picture. Once the buildings are detected the model will produce the list. Python code will order the detected buildings based on their pixel area and will select the largest building. I would aim for a model to detect building outlines in the form of a shape. The python code will then take an ad image and blend it into the shape for example using a



simple 50% alpha blender. The output will be an image of the street view with the building that has blended ad on its surface.

I don't know much about specific steps of training the model but I imagine that the model will be from a publicly available source. I will use the training methods that I learn about in the course and adjust specifically to detect buildings.

I imagine that the application will be at a minimum a python command line interface application that will take as input an image and a picture of the street view with the buildings and output blended image.

Ethical Considerations

Are there any ethical considerations of your project? Consider the data source, the intended outcome, and/or the eventual use cases.

- Did you modify anything about your plan based on these considerations?
- Can you anticipate any issues that might arise during the process?

I am not sure. I will be detecting buildings. I hope to learn about it as I go. I am new to machine learning so I can't think of it right now.