



FourthBrain

MLE Student Capstone Proposal

Project Title	Insert ads into the movie
Industry Sponsor	None

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AI Product/Capstone Project Description

Problem

[Write a succinct statement of the problem that you're trying to solve (<50 words)]

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.

Why

Write about why this is a problem worth solving. What is the business value hypothesis that connects to what success looks like and for whom? (~50-250 words)

Automate ads insertion into the movie. Inserted ads are less intrusive if they are part of the movie scene. Ads could be inserted live into the streaming video and this process automated. Business value is extra revenue coming from advertisers. In addition, movie producers could charge extra for movies without ads.



Success

Write about what success looks like. What is the Key Performance Indicator (or couple of KPIs)? How might they connect to a relevant ML model accuracy metric? (<50 words)

Successful project will take a video stream and ad. From a specified position in the stream, model will detect a building surface and track it over multiple frames until it is not visible any more. While it is visible it will blend ad clip on the surface and scale it appropriately to the tracked surface shape.

Audience

Specify exactly which users/customers this AI/ML product is being built for. What is the customer's pain or need that connects back to the problem? (<50 words)

Customers are anyone who wants to get exposure of their product through advertising within the movie. Customer pain is to make advertising non intrusive to watching a movie. By inserting ads into the movie scene and automating this process this goal is met.



What

Now describe what the ML looks like. This includes a discussion of data and sources, potential/likely models, a choice of an accuracy metric to optimize for and a defense of your choice. How does your accuracy metric connect back to the KPI(s) named above?

This is a computer vision problem. We need to detect a building from a given frame and track it while it is visible. Blending should happen in between frames. One frame of video will be blended with one frame of ad. We need a model to detect a building and track it. Data set is buildings. Selection criteria could be for the start the best building to display an ad on, for example the one with most visible pixels.

You may also find it helpful to fill out an [MLOps Stack Canvas](#) or [MLOps Stack Template](#). These tools really help to clarify tech stack requirements for our students.

Final Deliverables

At the conclusion of a cohort, students are expected to deliver:

- Deployed Demo
- 10-minute Presentation
- GitHub Repo (description in README + code)

For more detailed information on student capstone projects, you can check out the guide that we provide MLE students [here](#).



Anything Else?

Please provide any additional information on key activities, technologies, datasets, expected learning outcomes, potential mentorship or employment opportunities, or anything else not listed above!. And thanks for supporting our students!

About FourthBrain

FourthBrain trains aspiring Machine Learning engineers in the technical and practical skills necessary to contribute immediately to an AI team. Our remote, online program is designed to be flexible and accessible for anyone with software experience. We infuse values of collaboration, communication, empathy, and equity throughout the program.



We are part of the AI Fund, founded by Andrew Ng.