**Project Proposal**

Once you’ve picked your final capstone project idea, you will write a proposal. The project

proposal is a short (1-2 page) document that answers the following questions:

1. What is the problem you want to solve?

2. Who is your client and why do they care about this problem? In other words, what

will your client DO or DECIDE based on your analysis that they wouldn’t have

otherwise?

3. What data are you going to use for this? How will you acquire this data?

4. In brief, outline your approach to solving this problem (knowing that you may not

know everything in advance and this might change later). This might include:

a. Is this a supervised or unsupervised problem?

b. If supervised is it a classification or regression problem?

c. What variable is it you are trying to predict?

d. What variables will you use as predictors?

e. What will be your training data?

5. What are your deliverables? Typically, this would include code, along with a paper

and/or a slide deck.

## Creativity

Often we think that the goals of commercial computer vision have to do with helping people do more things or do them faster/more effectively. But in some cases, organizations are actually more interested in inspiring customers or sparking their imagination.

For example, people who post a lot of kitchen pictures to **Pinterest** may be planning a remodel. In fact, **Lowe’s** has been exploring how to take a person’s whole page of pins, match it against the Lowe’s catalog to find similar objects and then assembling all these pieces together visually. The business intent is to sell a whole new kitchen, but its success is connected to how Lowe’s helps users dream and turn those dreams into reality.

Staying with Pinterest, their “Shop the Outfit” capability could be placed in both the creative and social buckets—people want to look good, so they click on a piece of clothing and find various versions of it.

The ability for computers to pick out similarity on a range of axes can power all kinds of recommendations. Which is to say: models that can identify what makes a blue hightop a blue hightop can use that information to recommend products that are visually similar.

## Connection

Humans are social animals, so a lot of projects that seem to be about search/retrieval are really about how we relate to others.

Monitoring what’s inside photographs also lets companies identify products in social media. While relatively simple text analytics can tell you how people are mentioning your products, vision models can help you know know how often products are appearing in Instagram or any other platform.

Understanding a person’s style in clothing and cars can also help target them for related products. You can also match people with places—if you’re visiting a new city, where is it that people who look like you go? As you can imagine, a lot of computer vision applications require careful ethical reflection about what they do to privacy and social segregation.

Efficiency

The easiest business applications for computer vision come from helping people be more efficient; instead of fixing problems, just help people know where to look. For example, in content moderation, you can train a model to find offensive images without necessarily having to traumatize a bunch of human content reviewers with the more disturbing things that get posted on websites.