

Seven roads to data-driven value creation

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Not a closed list, not a recipe! Rather, these are essential building blocks for a

1. Predict




Figure 1. prediction

a. Examples of companies

1. Predicting crime 

2. Predicting deals 

3. Predictive maintenance 

b. Obstacles and difficulties

1. The [cold start problem](#)
2. Risk missing the long tail, algorithmic discrimination, stereotyping
3. Neglect of novelty

2. Suggest



a. Examples of companies

1.

Amazon's product recommendation system



2.

Google's "Related searches..."



3. Retailer's personalized recommendations [auchan]

b. Obstacles and difficulties

1. The cold start problem, managing [serendipity](#) and [filter bubble effects](#).
2. Finding the value proposition which goes beyond the simple "you purchased this, you'll like that"

3. Curate



a. Examples of companies

1.

Clarivate Analytics curating metadata from scientific publishing



2.

Nielsen and IRI curating and selling retail data [nielsen]



3.

ImDB curating and selling movie data



4.



NomadList providing practical info on global cities for nomad workers

b. Obstacles and difficulties

1. Slow progress: curation needs human labor to insure high accuracy, it does not scale the way a computerized process would.
2. Must maintain continuity: missing a single year or month hurts the value of the overall dataset.
3. Scaling up / right incentives for the workforce: [the workforce doing the digital labor of curation should be paid fairly](#), which is not the case yet.
4. Quality control

4. Enrich



Examples of companies

1.



Selling methods and tools to enrich datasets

2.



Selling aggregated indicators

3. Selling credit scores

Obstacles and difficulties

1. Knowing which cocktail of data is valued by the market
2. Limit duplicability

3. Establish legitimacy

5. Rank / match / compare



Examples of companies

1.

Search engines ranking results



2.

Yelp, Tripadvisor, etc... which rank places



3. Any system that needs to filter out best quality entities among a crowd of candidates

Obstacles and difficulties

1. Finding emergent, implicit attributes (imagine: if you rank things based on just one public feature: not interesting nor valuable)
2. Insuring consistency of the ranking (many rankings are less straightforward than they appear)
3. Avoid gaming of the system by the users (for instance, [companies try to play Google's ranking of search results at their advantage](#))

6. Segment / classify



Examples of companies

1. Tools for discovery / exploratory analysis by segmentation

2. Diagnostic tools (spam or not? buy, hold or sell? healthy or not?)



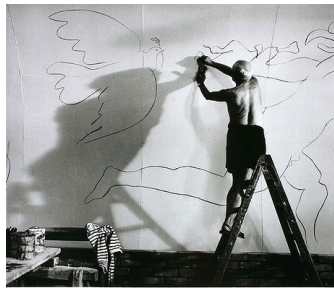
Obstacles and difficulties

1. Evaluating the quality of the comparison

2. Dealing with boundary cases

3. Choosing between a pre-determined number of segments (like in the k-means) or letting the number of segments emerge

7. Generate / synthesize (experimental!)



Examples of companies

1. Intelligent BI with [Aiden](#)



1. [wit.ai](#), the chatbot by FB



1. [Virtual assistants](#)



1. [Image generation](#)

1. Close-to-real-life [speech synthesis](#)



1. Generating realistic car models from a few parameters by [Autodesk](#)



Figure 2. Autodesk

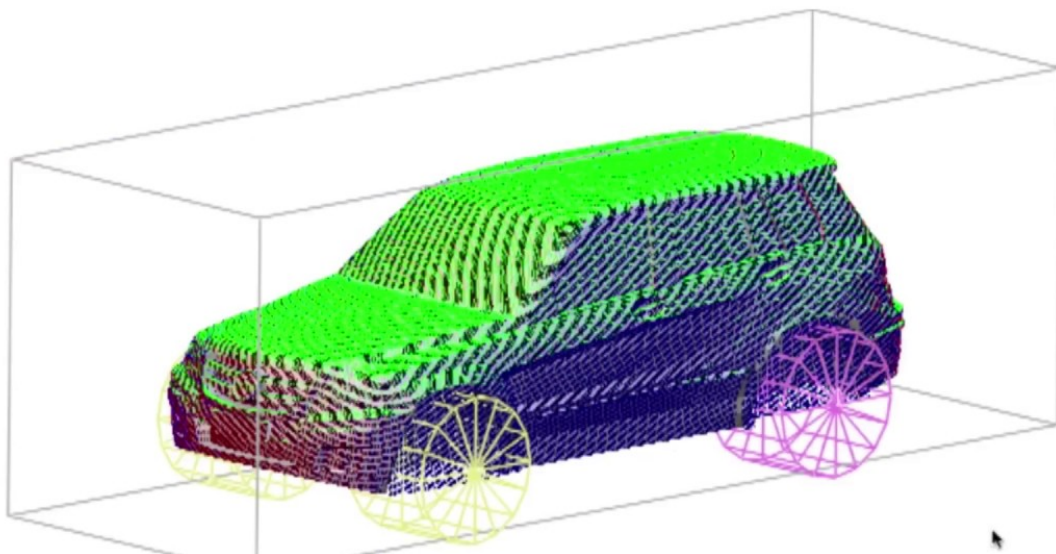
1. Generating summaries and comments from financial reports [Yseop](#)



Figure 3. Yseop

A video on the generation of car models by Autodesk:

Given a mesh of a car, we first compute depth maps from different viewpoints.



Obstacles and difficulties

1. Should not create a failed product / false expectations
2. Both classic (think of [clippy]) and frontier science: not sure where it's going

Combos



The end

Find references for this lesson, and other lessons, [here](#).



This course is made by Clement Levallois.

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