

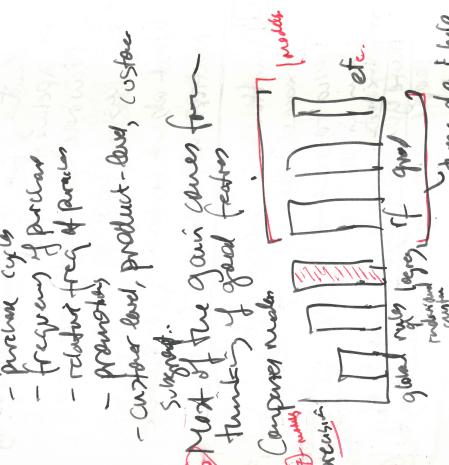
Diamond, 1988; Kondor, 1985; Tay O'Hearn, 1992
Stone Skilling 1991
Solar DE's from Bayesian

- Probabilistic numbers models the numerical uncertainty of propagates a probabilistic model of error from subsequent computations
- e.g. data-driven engineers
- in Petrochemicals & Petroleum
- oil field or elliptic PDE:
- e.g. Science Signaling - pharmacodynamics
- Computational Social Science
- e.g. Landmark police
- most solves weak series of linear functions (cf. Whitehead)
- e.g. Sandia screens jobs in flame + a in a tube at small scale.
- help needed combustion process
- call code 45
- increase decrease mesh size, but sometimes don't show trends, only precision
- If take most induced uncertainty into acc, then the dice shatters

52 weeks of data for each customer data

- product sales
- purchase cycle
- frequency of purchase
- relative freq of purchase
- previous purchases
- customer level, product-level, customer

52 weeks of data for each customer data



Make 20 recent purchases for 200,000 products

We have a lot of 0's.
Mainly only old data
Understanding is need to correct

Use this to look for substitutes in the recommended list.

Product Growth

- 10% of under previous because product lives accepted; need discuss as the response
- 14% illness in design method.
- use LSE reg to push off to 3 years

Use for all products to get a similarity matrix

e.g. Nutella \Rightarrow bananas
but not banana \Rightarrow Nutella

complementarity?

[Chart, 2018] Way of interpreting uncertainty due to lack of quality uncertainty in Pipeline of Computation

- New rule for statisticians...
e.g. ice cream flavor?
What about inverse of co-variance metric? also classic order?

B) Dunn Thursday, Sheena Patch
Recorded obs card \rightarrow released
Tend to become highest ~~superior~~
chain in US
"Have you forgotten"
people actually add something to
the list "incremental purchase" - things
that you would not have otherwise
periodically

Until recently "User-based"
Now: "recommender model": predict a
customer probability of purchase
+ recommend items
+ same people go straight to checklist

don't want a lot of low spend
products

(10) Metric: Precision - $\frac{1}{k} \times \text{proper}$ = proper % of products
within the top k of the predicted
scores which are purchased.

(11) Mean vs A/B Test B $\xrightarrow{\text{Test B improved}}$
Expected - actual
Actual cost of B
Customer are allocated to one of four
categories

Lets do uplift: when model bought
in 3+ time uplift. $\xrightarrow{\text{Hedge against risk}}$
Raw data/hr \rightarrow feature \rightarrow model
Alloc: $\xrightarrow{\text{Customer rule applied}}$ total 200
relative engine \rightarrow pieces up top 50%
challenge: reduce size of matrix;
- can 4 zone an realistic engine

Product relevance

- Identify substitutes "Self - Learning Substitutes" \rightarrow we detect for modelling substitutes,
use this to look for substitutes in the recommended list.

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Similarity matrix
e.g. Nutella \Rightarrow bananas
but not banana \Rightarrow Nutella
get many parts for drilling platforms

Complementarity?

Nobody would use it unless they
can understand it.

[C] Tim Park, Shell DS's or teaming
Statistics & Chemometrics "UK
- Advanced Analytics / India
- Data Science Network / NL