

Product Recommendations in our Online Shop

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Motivation

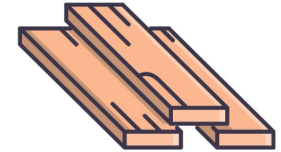
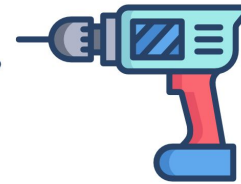
Situation / Problem / Goal:

Boost cross-sales in our online shop by showing related products that the customer might also be interested in.

current product



related products



Value Generation:

- ☐ internal process optimization
- ☒ improves existing product (e-shop)
- ☐ new product / Software-as-a-Service
- ☐ other:

Business KPI:

number of times a customer clicked on a related product and actually bought it

Status Quo:

0 (no related products shown right now)

Solution Outline

Deliverables: ☐ insights
☒ **software:** recommendation engine

☐ Build
☒ Buy

Inputs:

- ☒ (numeric) **values:** facts about the product
- ☒ **image**
- ☒ **text** (description of the product)
- ☒ **other:** other items that were bought with this

1 Data Point: a product

Workflow Integration:

should be part of our existing e-shop

ML Solution & Output:

- ☐ Dimensionality Reduction: **2D coordinates**
- ☐ Outlier Detection: **anomaly score**
- ☐ Clustering: **cluster index**
- ☐ Regression: **continuous value:** _____
- ☐ Classification: **discrete value (e.g., yes/no):** _____
- ☒ Recommender Systems/Information Retrieval: **ranking of items**
- ☐ Deep Learning: **other (e.g., image, text, ...):** _____

Additional Steps?

- ☐ Explain predictions (e.g., to identify root causes)
- ☐ Use model in optimization (to find optimal inputs)

Challenges & Risks (+ Mitigation Strategies)

What might go wrong?

Probability:

Can you do anything about this?

not enough ML expertise to build this ourselves

high

buy existing solution (but: how difficult will it be to integrate it with our existing e-shop?)

might show recommendations that aren't useful

medium

probably still better than nothing; track how often a user clicks on a recommendation in a dashboard & use A/B tests to compare different options

personalized recommendations will be difficult as it is hard to track individual users over longer periods (they have the option to check out as guests)

high

use an information retrieval approach instead of a recommender system and show the same related products for everyone

very diverse data and lots of preprocessing required

high

start with past shopping carts (what users bought together) and filter by product category; iteratively improve by adding more inputs