THOUGHT INDUSTRIES

Keep-Me-Engaged

Description of Feature Selection

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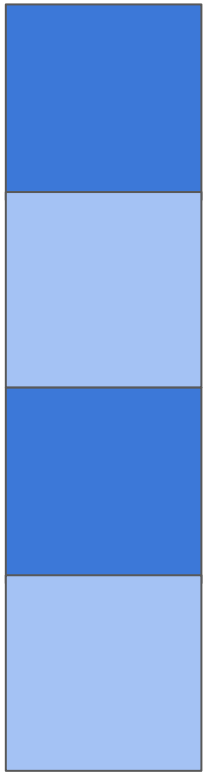

INSIGHT

THOUGHT INDUSTRIES

Description of Feature Selection Process

INSIGHT

THOUGHT INDUSTRIES

Data Generation:
Selecting Top ~20 features from 602 possibilities

- **Examine summary data about each feature**
  - ➢ How many courses does this feature apply to?
    If only 100 out of 200,000 courses use this feature, it isn't as helpful as a feature that 195,000 courses use
  - ➢ What kind of information is this?
    Numerical data (Quiz Scores) can sometimes be more informative than text data (Quiz Passed: True/False)

THOUGHT INDUSTRIES

Data Generation:
Selecting Top ~20 features from 602 possibilities

- **Prioritize features inside the project scope**
  - ➢ We were interested in examining features that course instructors & course designers can use. Prioritize these features over eCommerce features.

  - ➢ Write down whether that feature will help **measure** engagement or **predict** engagement

    *Whether or not a user completed the course **measures** engagement*
    *Whether or not certificates are offered could **predict** engagement*

Data Generation: Selecting Top ~20 features from 602 possibilities

- **Summarize information across all users**
  - ➢ Summarize all course information into one row in an Excel spreadsheet
    Average quiz score across all learners in that course
  - ➢ If there's information that can't be summarized, don't include it
    The email addresses of every course learner shouldn't affect engagement scores

Feature Selection & Transformation

- **Standardize measurement units**
  - ➢ Try to make the units of measurement similar across all variables
    "Percent of Courses that Use this feature"

- **Continue to limit scope**
  - ➢ Delete courses that are "pending" or "drafts"
  - ➢ Only look at courses that have been viewed at least 1 time

- **Delete features that are highly correlated with Engagement Scores**
  - ➢ Example: Average number of hours spent on the course

Missing Values

- **Delete some courses with missing values**
  - ➢ *Example*: Courses that are missing our target (Engagement Scores)
- **Replace missing values with 0**
  - ➢ *Example*: No value for Number of Collaborations = no collaborations
- **Combine multiple features into one summary feature when only half the courses use SCORM at all**
  - ➢ *Example*: Average SCORM score, % SCORMs completed, % API SCORM, % Shareable SCORM ⇒ “Uses SCORM yes/no”
- **Fill in missing values with the median value**
  - ➢ *Example*: Average quiz grade