

To succeed in software project
one need to focus on its goal.
To measure its success
one needs to have

GOAL
FOCUSED
METRICS

A Recommender Algorithm to Automatically Generate Metrics for GQM Models in Software Development

Gorb Anna
Innopolis University
Faculty of Computer Science and Engineering

number of participants

number of participants

number of participants

(a) Participants distribution by years

(b) Distirbution by work experience

(c) Distirbution by working areas

35 Engineers

38 Goals

64 Questions

∞ Metrics

Create the library application

- 1. How much time the project will take?
- 2. How many people we need to involve?
- 3. How much budget we need to construct the MVP?

- 1. Amount of time
- 2. Number of people
- 3. Amount of money

Dataset

Non-letters removal

Tokenization

Stopwords removal

Part of speech

Lemmatization

TF-IDF

Preprocessing

(d) Preprocessing steps usage quantity

(f) Combinations standard deviation, ms

(g) Multiple pairwise comparison test using Tukey
method with familywise error rate 0.05

(e) Combinations average time, ms

(h) Multi-label Algorithms Comparison

(h) Dataset division for the experiment

(i) Classification of recommender algorithms
for software developers

Classifier chains can handle cross-dependent metrics

Binary relevance can be easily explained

Recommender

Using a prototype, the work of
the algorithm was tested on the
test dataset.

Accuracy is 0,714

(j) Authorization page

(l) Metrics generation

(k) Goals identification

(m) Questions identification

(n) Metrics selection

Prototype