

Qualitative
Approach

Quantitative
Approach

Literature
Review

DATA PREPARATION



only JavaScript,
TypeScript,
and Vue
Repositories
(2012-01-01 –
2023-06-28)

SAMPLED

365871 Repositories



JavaScript

129294 Repositories



TypeScript



Vue

24114 Repositories

only repos that:
i) Are comparable (e.g., apps, frameworks, libs)
ii) Have closed bug issues
ii) Have more than 30 commits

FILTERED

400 Repositories



JavaScript

400 Repositories



TypeScript



PROCESSED



Data

- Code Smells, Cognitive Complexity, ncloc
- any Type (for TypeScript repositories)
- Framework used
- Bug Issues
- Bug-Fix Commits
- Metrics (e.g., code smells per LoC)

EVAL

Cross-
Validation

MODEL

Hypothesis
Tests

Correlation
Tests

Support Vector
Machine