Posters
Tutorials

We hope you will enjoy these presentations.

- Please join us also for the organized by QRS:
  - Excursion for a guided tour to the Old Town Square in Prague.
  - Banquet with a concert and an award ceremony.
The Importance of Standards

Article I, Section 8: The Congress shall have power to...fix the standard of weights and measures

- National Bureau of Standards established by Congress in 1901
- Eight different “authoritative” values for the gallon
- Electrical industry needed standards
- American instruments sent abroad for calibration
- Consumer products and construction materials uneven in quality and unreliable

Estimated that 80% of global merchandise trade is influenced by testing and other measurement-related requirements of regulations and standards
Random selection

P: measure in Random selection:

\[ P = 1 - (1 - \theta)^Y \]

\[ Y = 1 - (1 - \theta)^{-0.9} \]

\( \theta \): failure rate, the ratio between the failure-causing inputs and the total size of the input domain.

\( Y \): the probability of detecting the first defect for a test set (suite).

\( N \): the number of test cases in the test set (suite).
MOOC TEST

Type in your information and complete an registration.
Make sure you choose "monster" instead of "mooc".

Identity:
Email:
Password:
Approach - SOME

Statement-Oriented Mutant Reduction strategy

SOME firstly selects the total set of mutation operators and employs them to produce mutants on each statement covered by failed test cases.

Then SOME selects a specific percentage of mutants by utilizing mutants' sampling method on each mutant point for each statement.
Naive method: Explain

1. Test suite. Test result
2. Max interaction size \( c \)
3. Any test set \( \alpha \), \( \beta \)

- \( \alpha \) contains \( c \) tuples of parameter-values
- Include in the failed test cases.

- \( \beta = (p_1, 1), (p_2, 1), (p_3, 1) \)
- \( \beta = (p_4, 2), (p_5, 3) \)

1. For each tuple in \( \beta \), check whether or not it's included in any passed test cases.

\( R = \{(p_1, 1), (p_3, 1), (p_5, 3)\} \)
Problem:
Customers are risk-averse, tending to remain on older releases that do not contain important fixes and features.
How do we convince customers that newer releases are reliable?
Software Reliability as User Perception
Application of the Fuzzy Analytic Hierarchy Process to Software Reliability Analysis

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Outline

1. Motivation
2. The Android Permission Framework
3. High Level Petri Nets
4. Incrementally Building Petri Net Model of Android Permission Framework
5. Model Analysis
6. Related Works
7. Concluding Remarks
Existing component: remove one redundant component and judge.

New component: current reliability is \( r_{new} = R_{new} \).

If \( r_{new} \) is not enough, delete the component from the component set and choose the second lowest important component to replace its reliability or remove one redundant component.
Definition and Implementation

ParTraP: Parametric Trace Property language

- Formal syntax and semantics
- Prototype implementation freely available
  - Realised in Haskell
  - Offline monitoring only
  - Offers good performances
  - Checked several properties on real surgery traces
    - 10% of the traces violate the properties “The user never skips a screen”
    - Attributed to a failure in the pointer device or an incorrect surgeon gesture
Overview

Domain: control automation engineering
Architecture for cloud-based monitoring, checking of control software components w.r.t. behavioural specification via trace messages
Simulate controller-software components
Preliminary results for simple performance evaluation (msg rate / CPU usage / bandwidth)
Threat landscape 2016

Source: IBM X-Force Report
MOTIVATION AND GOALS

- The purpose of this systematic mapping study is to provide an overview of the empirical research in the area of cloud-based software testing, in order to build a classification scheme.

- Our survey of the literature shows that there are no comprehensive systematic mapping studies in the area of cloud software testing. This led us to work on the systematic mapping study presented in this paper.

- Investigate both functional and non-functional testing methods, the application of these methods, and the purpose of testing using these methods.
Question: How to find $r_s$ for given
### Performance statistics

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<tr>
<td>Number of submissions</td>
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<tr>
<td>The average score</td>
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### Member status

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<th>Case 2</th>
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