**Software ecosystem**

**Trends and impact on software engineering.**

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**Conference name**

Brazilian symposium on software engineering (SBES), at natal

Introduction/motivation

Economics and social issues in software engineering (SE) have been pointed out as a challenge for next year.

Software and system development involve better thinking about platforms.

The software ecosystem (SECOS) is an emergent field inspired the concept of more business and biological ecosystem

In this sense component-based development (CBD) represents a fundamental polar of SECO.

In SE community, studies of SECOS were motivated by the SPLs approach.

Methodology

Reuse ECOS methodology aims at guiding and allowing deeper research related to support SECOs M $ E based on empirical studies in research strategy. The next steps are to plane systemic review of SECO.

Finally, this research strategy can provide a data base to make SECOs.

**Summary**

prospective to analyze the software industry called software ecosystem. This is an emergent field inspired on concept from Moore and lansitis business and biological ecosystem (Moore 1993) and (lansiti 2004) As a new perspective in SE, SECO should be characterized in order to understand trends and impacts in SE and review its status. What is currently known about this topic this demand motivated a previous study focused on undertaking a systematic mapping study to present a review of primary studies on SECO’s. Systematic mapping is a method that gives after a systematic research process a visual summary map of its result.

According to budge (2008) in systematic mapping studies the research questions itself is likely to be

much brander than in systematic literature review. This is necessary in order to adequately address the wider scope of study.

The focus on the SECO scope is required to understand SECOs from a three-level perspective, since each level has distinct research challenges. These challenges can be treated through the definition of general properties of target objects (in organizational,SSN, or SECO level), E.g: health ,interaction, performance ,input ,output ,competition ,value sharing and coordination methods. Beyond the scope, different dimensions that cross the SECO levels should be considered in order to represent the pillars extracted from literature systems and platform; networks and social business; and actors, organizations and businesses ecosystems.

**Efficient testing of cyber –physical system**

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**Introduction /motivation;**

The (CPS) is a new paradigm that purses the convergence of physical and cyber spaces in which we live. CPS include software, hardware, sensors, actuators and is connected to human machine interfaces and multiple system.

The development of CPs technology is key to improving the quality of life more efficiently then even before, but the risks are becoming more and more acute in terms of security. Taking into account the existing security issues and security charges we have studied the security requirements of CPs based on attacks on the CPs.

**Methodology:**

When designing a CPs, it is most important to develop a formal description, structural modeling approaches that are based on widely used complex system. It involves various engineering system which we used in this paper.

**Summary:**

Cyber-physical system is characterized by computational elements and physical processes that are deeply interviewed, each potentially involving different spatial and temporal scales, modalities and interaction we expressed that they consist of computational elements such as programmable logic controllers distributed over a network and interacting with their processes via sensors and actuator. CPs are commonly used to automatic aspects of critical civil infrastructure such as water treatment or management of electricity demand. Given the potential to come massive description, such systems have because prime targets for cyber attackers with successful cases reported in recent years.

**Evaluations**

To evaluate our approach against these requirements, we implemented it for two CPs testbeds first. The secure treatment test bed a fully operational water treatment plant consisting of 42 sensors and actuator. able to produce five gallons of drinking water per minute.

The development of CPs is decreased from perspective of system model information processing technology and software design. The advantage in the developments and applications of CPs is surveyed. A review of CPs in Healthcare is prevented for man Is research challenges (security, energy consumption, mobile dynamic environment and system stability) in mobile CPs are dispersal. Intensive literature one the frontiers of CPs security is received and key researched challenges are identified and the integration of cloud competing with CPs received.

The advances of research in the ad of cloud-based services and big data analytics for smart manufacturing are received. Testing methods for CPs are surveyed for simulation –based testing and verification for embedded central systems, and over viewed of existing and emerging advanced technics for qualitative and quantities specifications based monitoring CPs behaviors are summarized .for test beds a comprehensive survey on smart grid CPs is presented which focuses on smart grid domains, research goals test platforms and communication infrastructure.

**Online monitoring for CPs testing:**

Complete testing or for al verification is impossible for complex CPs but as a lightweight verification Technology, online monitoring and run time verification provides one useful formal technique for improving the reliability of real or stimulated system.

CPs monitoring is the act of simulated models. Monitoring is the run time verification by observing and evaluating the temporal behaviors of real systems or simulated models .Monitoring algorithm can qualitatively and quantitatively verify the satisfaction of a formula by a signal (not whole system) which is much easier than traditional model checking .

**Hybrid Methods for Reducing Database Schema Test Suites:**

**Suites:**

Expixmental insights from computation and human studies

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**Conference name:**

IEEE (ACM 1st international conference on Automation of software Test (AST)).

**Summary**:  
software applications rely on a relational database for critical data storage, thus leading industry experts   
to advise that they be rigorously tested to ensure their correctness. Developing a relational database   
involves the challenging task of specifying a schema that has integrity constraints designed to protect   
the data in the database. Since the incorrect definition of the database schema While there are general purpose methods for reducing a test suite, our prior work presented STICCER, a hybrid method that   
combined greedy test suite reduction with a merging approach for database schema testing. Yet,  
since other hybridizations are also possible, this paper presents two empirical studies investigating test   
suite reduction techniques for relational database schemas:  
  
Computational Study.  
When comparing two well-known test suite reduction methods, called Greedy and Harrold-Gupta Soffa (HGS) , our prior work showed that HGS achieved an average level of reduction of 46% and   
50% for database schema test suites generated by AVM-D and Domino, respectively. This result   
represents a greater level of reduction than that achieved by the Greedy method, which was 43% and   
48% reduction for tests resulting from the same test generators. The first set of research questions   
posed by the Computational Study in Section 3 of this paper, therefore, explore the theme characterized   
by the general question “Are further efficiencies possible if we reduce test suites prior to merging with   
STICCER using HGS, as opposed to Greedy? ”.  
  
Human Study  
the human oracle costs arising from inspecting tests are an important aspect of research in automated   
test suite generation, that hitherto remains unevaluated in the context of hybrid techniques like   
STICCER. The second set  
of research questions studied in this paper, which appear as part of the Human Study in Section 4,   
concern the matter posed by the general question “While STICCER produces test suites with fewer test  
cases and statements overall, does it lower human oracle costs; or are the tests more difficult to   
understand, therefore increasing costs?

**Relational Database Schemas**A relational database management system (RDBMS), such as SQLite or Postgres, is  
software that hosts and manages one or more relational databases. Each database is defined by a   
schema through SQL statements, as shown by Figure 1’s example. A schema defines one or more tables,   
each involving a set of columns (i.e., “id” through to “date\_of\_birth” in the example) that describe the   
data (in this instance, information about an individual person) to be stored in the table’s rows. Each   
column has a data type (e.g., int, VARCHAR — a string with a  
defined number of characters, and date — a day, month, and year). Finally, relational database schemas   
feature integrity constraints that a developer specifies in the definition of an individual column or the   
wider table. Integrity constraints play a significant role in maintaining the reliability, consistency, and   
coherency of data. In the example, both the id and email columns must store distinct values, since   
they are constrained with PRIMARY KEY and UNIQUE constraints, respectively. Columns marked with   
“NOT NULL” cannot store NULL values. Finally, the CHECK constraint declaration only allows one  
selected value from the list in the gender column for each row.

**Test Suite Reduction Methods**:  
Reducing test suites while maintaining coverage is a problem equivalent to that of minimal set cover and   
as such is NP-complete. However, many techniques exist that are effective at producing   
approximate solutions. Here, we introduce the ones that we have implemented into SchemaAnalyst It   
then proceeds to merge the tests in the reduced suite by “sticking” sub-sequences of statements from   
different test cases together to produce a new replacement test case. STICCER produces a “candidate”   
merged test tm by first removing the setup steps from t2, and then appending the remaining test   
statements to the end of t1. If tm has the same coverage as the original two tests t1 and t2, then   
STICCER replaces t1 and t2 with tm in the test suite

**Introduction/motivation:**

Many software applications roily on a relational data base for orifical data storage. Drooping a relational database ivories challenging task of a specifying a schema that has integrity constraints designed to protect the data in database.

The test scents that they create may have many tests with numerous and sometimes similar. Where there are general purpose methods for reducing a test suit.

Our prior work (STICCER) and a hybrid method.

This paper presented tow empirical studies investigating test suite reduction techniques for relational database schemas

1. Computational studies.
2. Human stades.

**Methodology:**

In we have used two methods human study and computational study for working on relational suite of reducing database. By using their methods, we have collected data and worked on our aim.