CREST Open Workshop: Code Provenance and Clone Detection

23 November 2010

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UCL

Cloned COW:
COWs are Type 3 Clones

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COWs are Type 3 Clones

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Centre for Research on Evolution Search and Testing *Est. 2006*

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1 admin

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1 admin

4 faculty

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1 admin

4 faculty

8 post docs

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1 admin

4 faculty

8 post docs

11 PhD students

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Centre for Research on Evolution Search and Testing *Est. 2006*

1 admin

4 faculty

8 post docs

11 PhD students

1-4 resident visiting scholars

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Research

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Research

Service Oriented Computing

Search Based Software Engineering

Clone Detection

Dependence Analysis

Quantitative Information Flow

Digital Humanities

Testing

Requirement Engineering

Slicing

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Research

Service Oriented Computing

Search Based Software Engineering

Clone Detection

Dependence Analysis

Quantitative Information Flow

Digital Humanities

Testing

Requirement Engineering

Slicing

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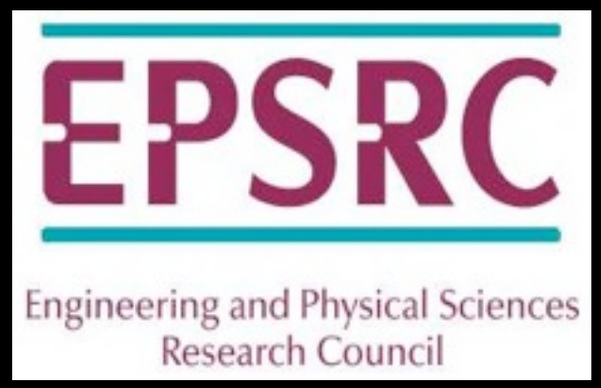
Funding



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University College London

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University College London
20 mins walk

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oned COW

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University College London
20 mins walk

Sherlock Holmes Museum

Madame Tussaud's

UCL

British Museum

Marble Arch

Eros

Nelson's Column

Covent Garden Market

RoyalCourts of Justice

St. Paul's

National Gallery

Westminster Abbey

House of Parliament

London Eye

Tate Modern

Globe Theatre

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Search Based Software Engineering

Apply search techniques to Software Engineering

Multi objective optimisation:

- cost and value
- faults, coverage, time
- metric sets
- risk and reward

Centre for Research in Evolution, Search &

Software Engineering Application areas:

- Requirements
- Testing
- Project Management
- Refactoring
- Source Code Analysis

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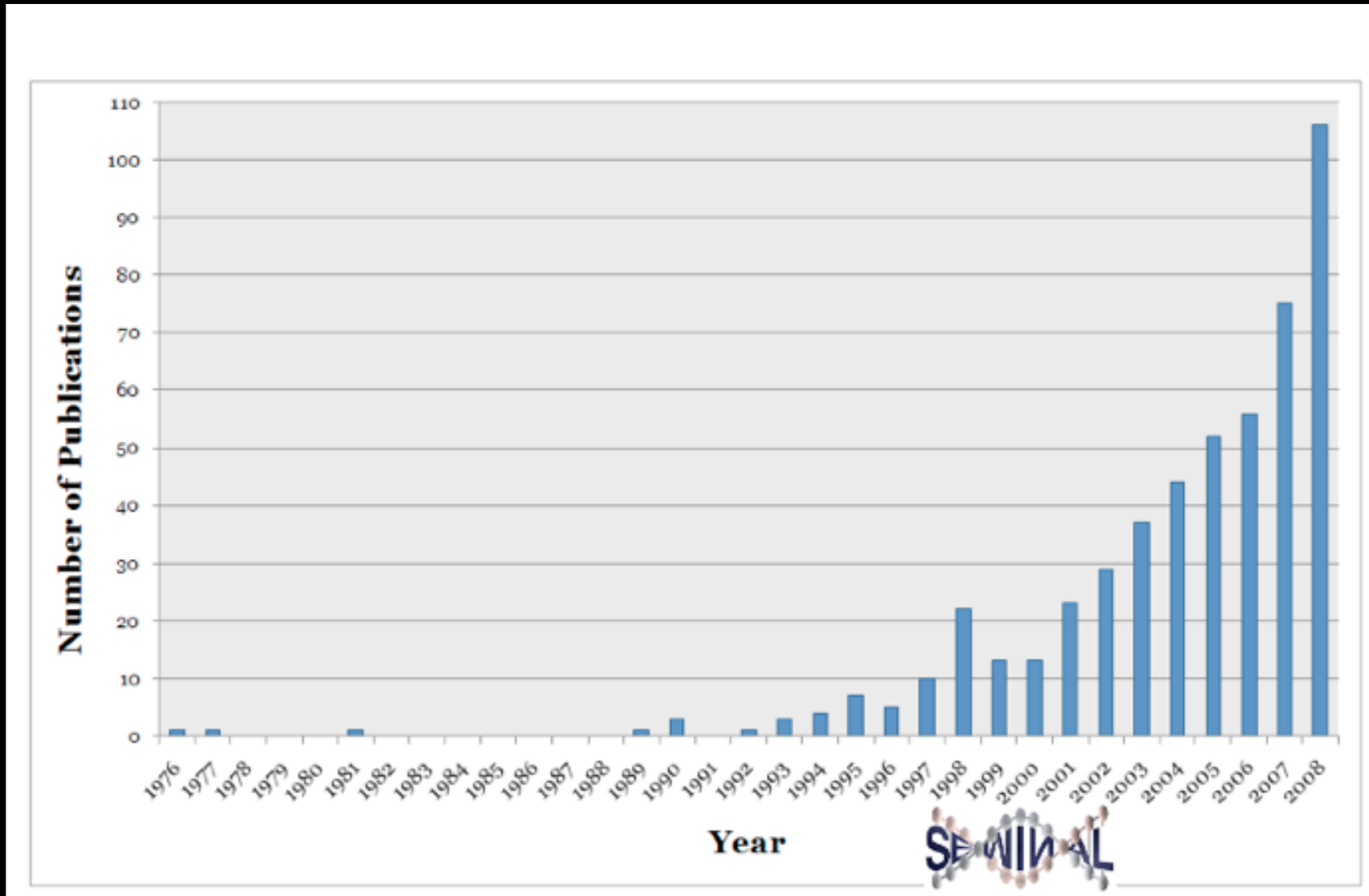
Search Based Software Engineering



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Testing, Testing, Testing

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Testing, Testing, Testing

Mutation testing
Model based testing
Automated test data generation
Web application testing
Service oriented testing
Fuzz testing
Security testing
Regression testing

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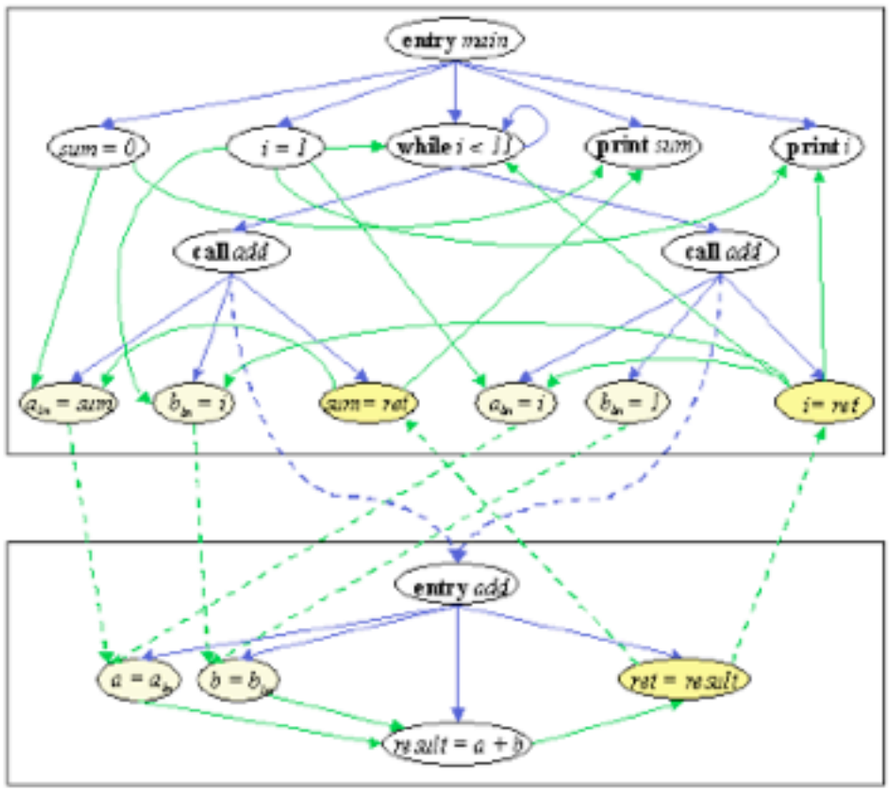
Dependence Analysis

dependence clusters
impact analysis
program and model based slicing
assessing third party code

SLIM
SLicing state based Models

ASTReNet



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Quantitative Information Flow

calculate amount of information flowing

find security leaks

Quantitative Information Flow

An EPSRC funded research project based at three sites in London:

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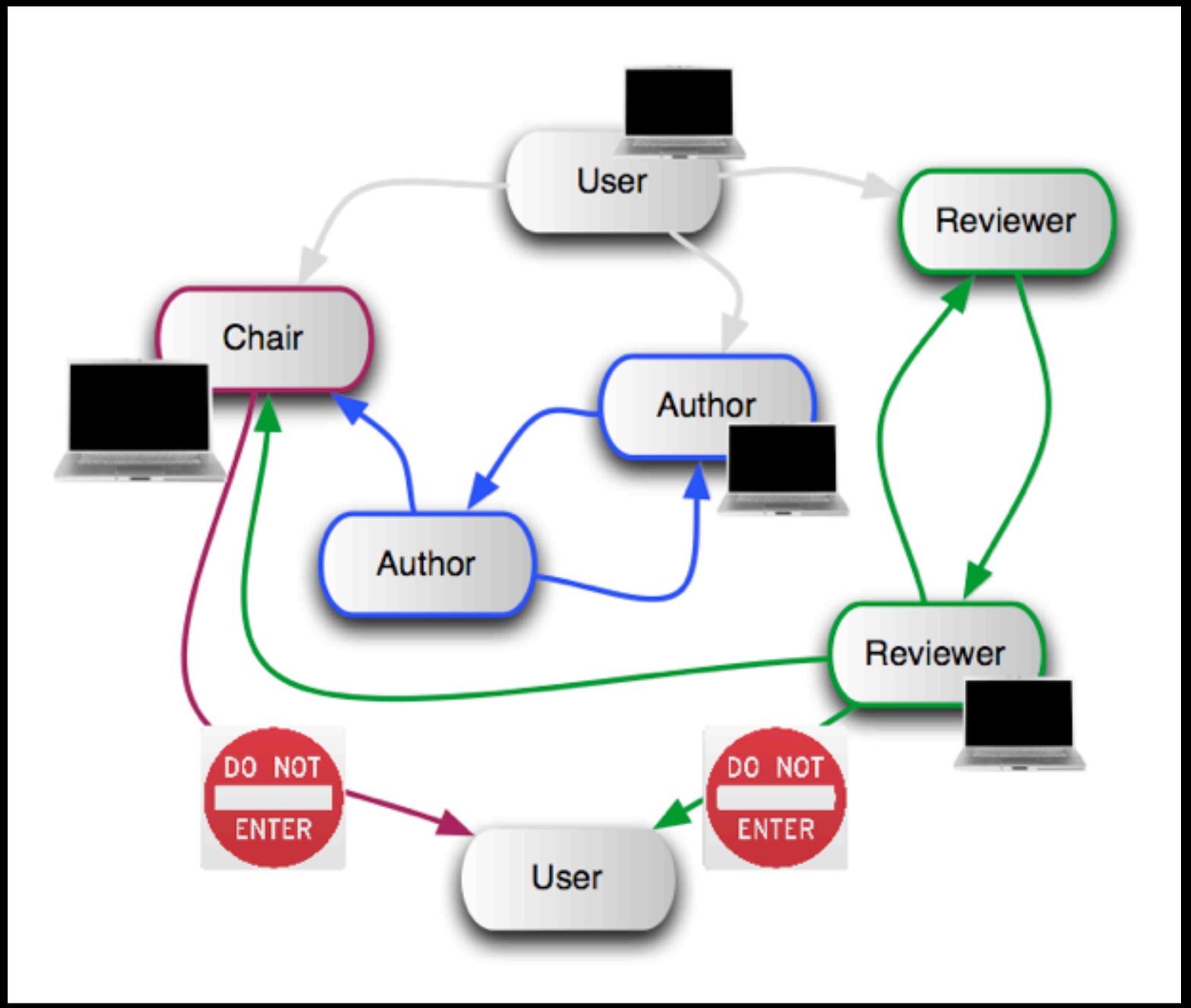
Information Flow Control



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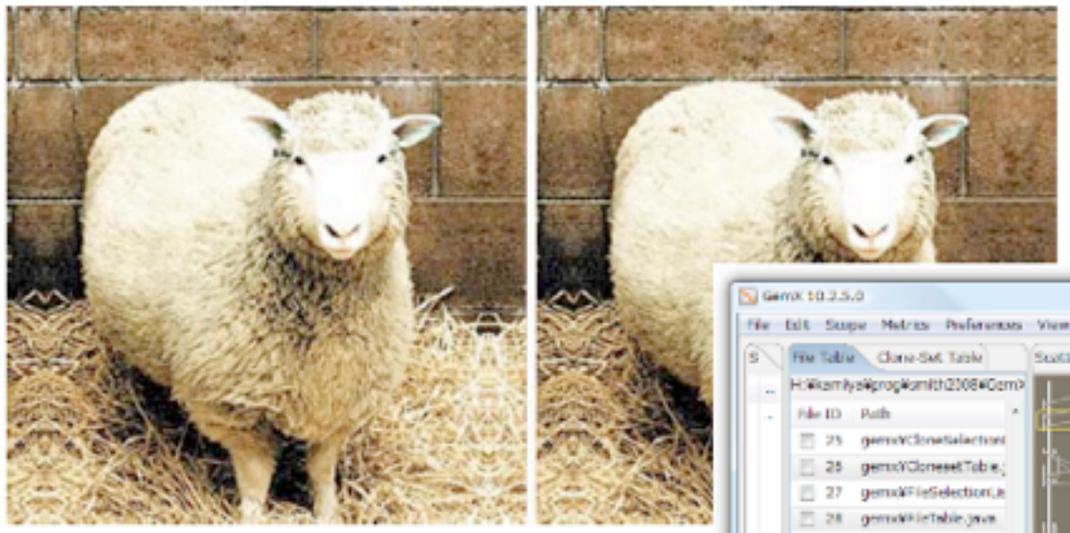
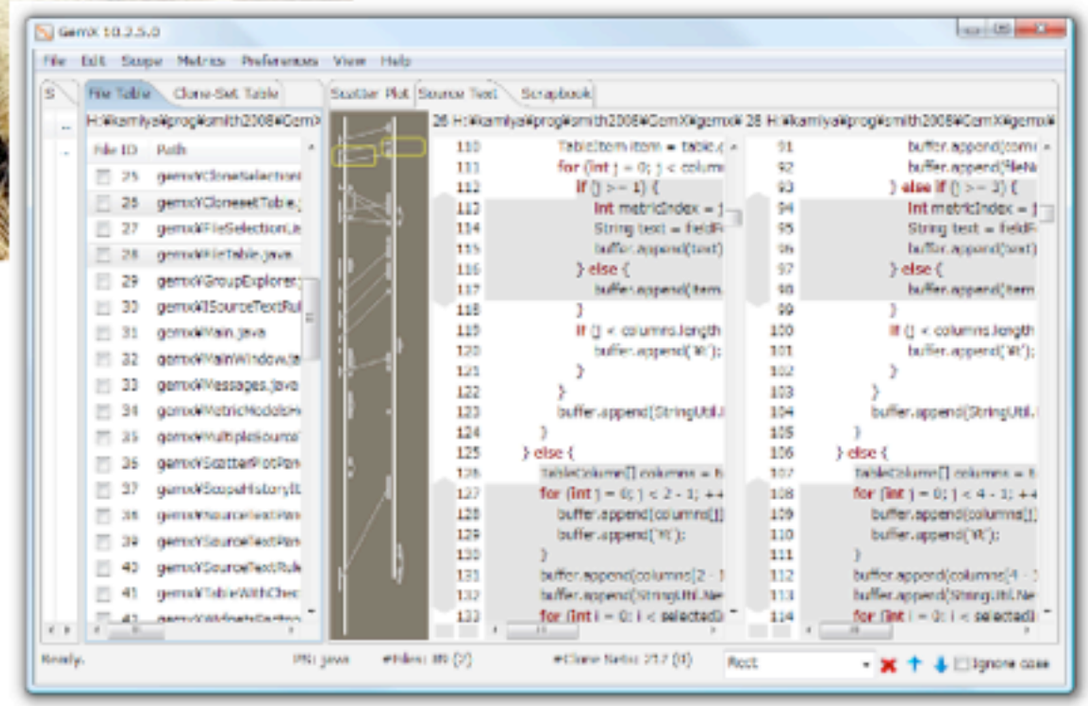
Clone Detection

using static analysis
applied to code provenance
applied to graphical languages





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Digital Humanities

Mapping outwards from software to systems

Software Engineering Analysis translates to

- musicology
- archaeology

PERSONAL-TOUCH

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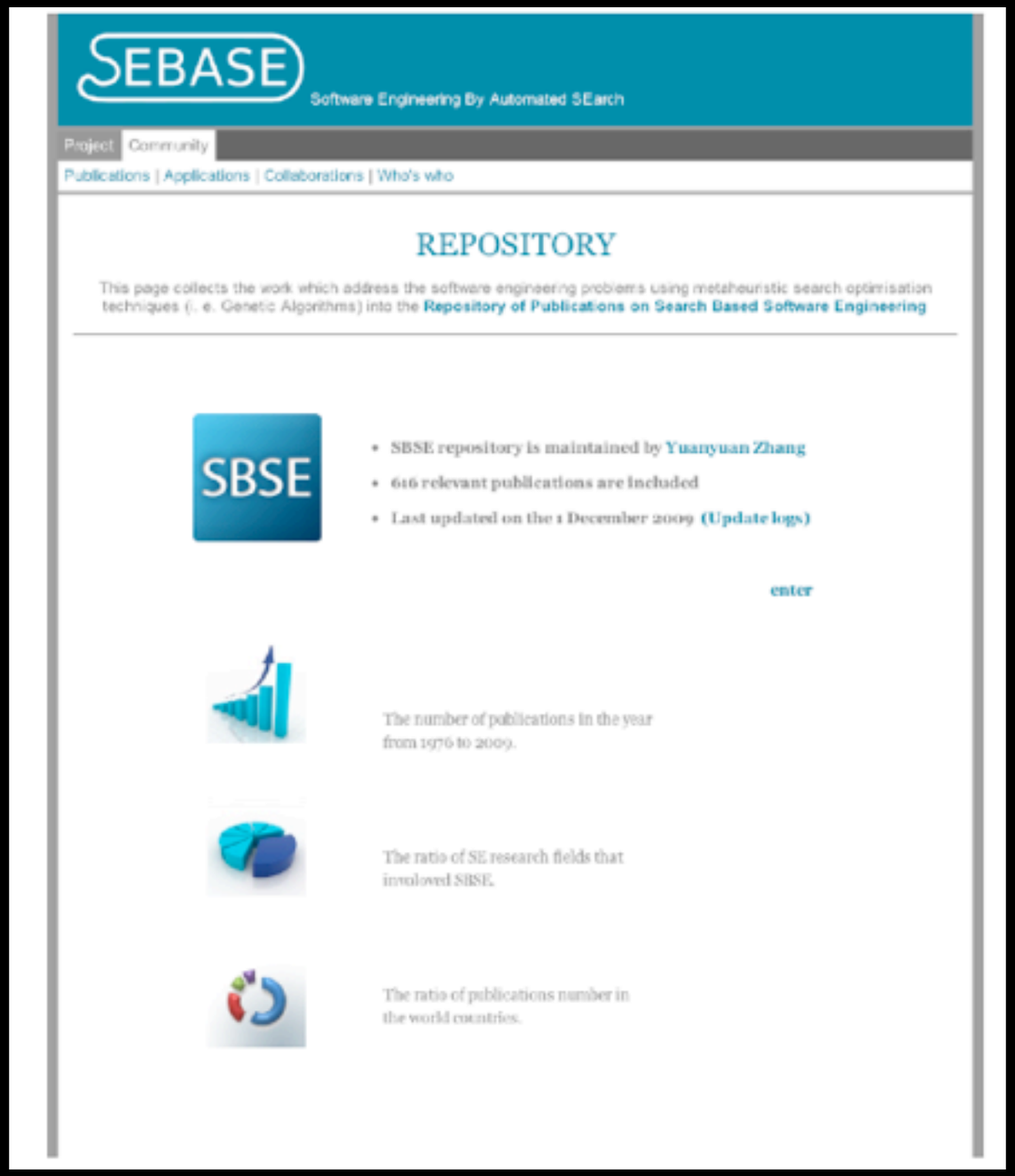
SBSE Repository



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GP Bibliography

The Genetic Programming Bibliography

[Search It | Most recent | Top 10 Cited | Most Downloaded | Add to It]

The bibliography is part of the Collection of Computer Science Bibliographies
It is maintained and managed by William Langdon, Steven Gustafson, and John Koza.

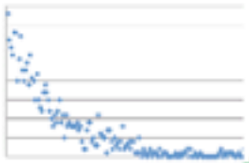
Add single entries or emai1 William Langdon or firstname D0T lastname AT-SYMBOL research D0T ge D0T com a bibtex file containing the entries.

Bibtex file

gp-bibliography.bib (Compressed) Over 6000 GP references

Other formats

refer format (Compressed)
text file (Compressed)



Author format (split by first author)

co authorship graphs

Search Interfaces

The GP bibliography is one of the many online computer science bibliographies
There are several on line search tools for these bibliographies. For example:
o WWW form based search
o The coauthor graphs can also be used for searching by author name.
o You can find all entries for an author using a URL like this one: http://www.cs.bham.ac.uk/~wbl/biblio/gp-html/**WilliamBLangdon.html**
Naturaly you must replace **WilliamBLangdon.html** by the author's name.

Other Resources

o Bibliographies of evolutionary computation conferences.

o Hints on using bibliographies with PC based word processing packages
o Links to other information on bibliographies.
o Subdirectory containing some tools and templates for maintaining bibliographies.
o Links to other bibliographies.
o Home pages of some GP researchers

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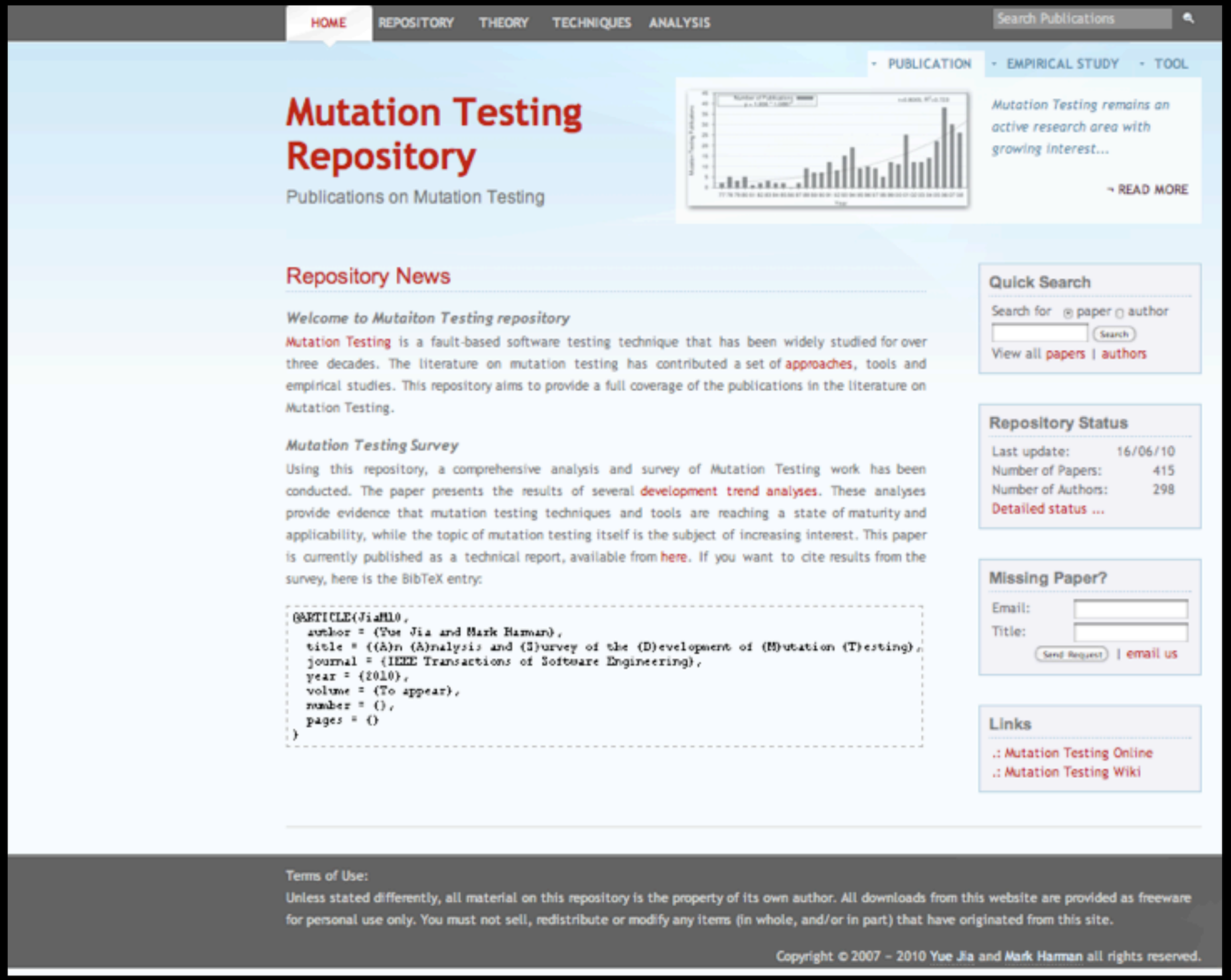
Mutation Testing Repository



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COWs

CREST Open Workshop

Typically last week of the month

Aim for last Wednesday (where rooms available)

Discussion based

Recorded and archived

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Previous COWs

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Previous COWs

Nov 09: Search Based Software Engineering

Dec 09: Software Testing

Jan 10: Using Static Analysis for Fault Prediction

Feb 10: Operational Research for Software Engineering Methods

Mar 10: Information Theory for Search Based software Engineering

Apr 10: Dependence Analysis and Slicing for Programs and Models

May 10: Information Flow and Security

Oct 10: Advanced Mootation Testing

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Happy Birthday!

First COW: 24/25 November 2009

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Upcoming COWs

10th CREST Open Workshop

Program Analysis and Slicing

Date: 24 - 25 Jan, 2011

Venue: William Goodenough Room, Goodenough Club

11th CREST Open Workshop

SBSE for Early Lifecyle Software Engineering: Requirements and Management

Date: Wed 23 Feb, 2011

Venue: Engineering Front Executive Suite, Roberts Building

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Thanks

Jian Ren, COW Programme manager

Lena Hierl, Administrative arrangements

Yue Jia, visitor liaison

EPSRC, HP, British Council, funding

Attendees and speakers

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Domestics

Fire or other alarm

Toilets

Discussions

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Domestics

Fire or other alarm

Toilets

Discussions

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Mary Augusta Ward

- British novelist (Mrs Humphry Ward)
- 11 June 1851 - 24 March 1920
- one of the founders of the Women's National Anti-Suffrage League
- helped establish an organization for working and teaching among the poor
- The house acted as center of training and community meeting and socialising point

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Introductions …

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