Mutation
Motation
Mootation
Mootation COW
Mootation COW
CREST Open Workshop
Mootation COW
Centre for Research on Evolution Search and Testing  Est. 2006
Centre for Research on Evolution Search and Testing  

admin
Centre for Research on Evolution Search and Testing

1 admin

4 faculty
Centre for Research on Evolution Search and Testing  

1  admin  
4  faculty  
8  post docs
Centre for Research on Evolution Search and Testing

1 admin
4 faculty
8 post docs
11 PhD students

CREST

Est. 2006
Centre for Research on Evolution Search and Testing (CREST) Est. 2006

1 admin
4 faculty
8 post docs
11 PhD students
1-4 resident visiting scholars
Research
Research

Service Oriented Computing
Search Based Software Engineering
Clone Detection
Dependence Analysis
Quantitative Information Flow
Digital Humanities
Testing
Requirement Engineering
Research

- Service Oriented Computing
- Search Based Software Engineering
- Clone Detection
- Dependence Analysis
- Quantitative Information Flow
- Digital Humanities
- Mutation Testing
- Requirement Engineering
University College London
20 mins walk

Mark Harman
Mootation COW

Monday, 31 January 2011
Search Based Software Engineering

Apply search techniques to Software Engineering

Multi objective optimisation:
- cost and value
- faults, coverage, time
- metric sets
- risk and reward

Software Engineering Application areas:
- Requirements
- Testing
- Project Management
- Refactoring
- Source Code Analysis

Centre for Research in Evolution, Search & Evolutionary Algorithms
Search Based Software Engineering

![Bar Chart showing the number of publications over years]

Mark Harman
Mootation COW

Monday, 31 January 2011
Testing, Testing, Testing
Testing, Testing, Testing

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

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

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

SLIM
SLIcing state based Models

ASTReNet
Quantitative Information Flow

calculate amount of information flowing
find security leaks  **Quantitative Information Flow**

An [EPSRC](http://www.epsrc.ac.uk) funded research project based at three sites in London:
Information Flow Control

Diagram showing the roles of User, Reviewer, Author, Chair, and the flow of information between them.
Clone Detection

using static analysis applied to code provenance applied to graphical languages
Digital Humanities

Mapping outwards from software to systems
Software Engineering Analysis translates to
  - musicology
  - archaeology

PERSONAL-TOUCH
SBSE Repository

This page collects the work which address the software engineering problems using metaheuristic search optimisation techniques (i.e. Genetic Algorithms) into the Repository of Publications on Search Based Software Engineering.

- SBSE repository is maintained by Yuanyuan Zhang
- 666 relevant publications are included
- Last updated on the 1 December 2009 (Update logs)

Enter

The number of publications in the year from 1976 to 2009.

The ratio of SE research fields that involved SBSE.

The ratio of publications number in the world countries.
GP Bibliography

The Genetic Programming Bibliography

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 email 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)

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:
- WWW form based search
- The coauthor graphs can also be used for searching by author name.
- 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 Naturally you must replace WilliamBLangdon.html by the author's name.

Other Resources
- Bibliographies of evolutionary computation conferences.
- Hints on using bibliographies with PC based word processing packages
- Links to other information on bibliographies.
- Subdirectory containing some tools and templates for maintaining bibliographies.
- Links to other bibliographies.
- Home pages of some GP researchers
Mutation Testing Repository

Welcome to Mutation Testing repository

Mutation Testing is a fault-based software testing technique that has been widely studied for over three decades. The literature on mutation testing has contributed a set of approaches, tools and empirical studies. This repository aims to provide a full coverage of the publications in the literature on Mutation Testing.

Mutation Testing Survey

Using this repository, a comprehensive analysis and survey of Mutation Testing work has been conducted. The paper presents the results of several development trend analyses. These analyses provide evidence that mutation testing techniques and tools are reaching a state of maturity and applicability, while the topic of mutation testing itself is the subject of increasing interest. This paper is currently published as a technical report, available from here. If you want to cite results from the survey, here is the BibTeX entry:

```latex
@ARTICLE{JiaHar09,  
author = {Yue Jia and Mark Harman},  
title = {{A}n {A}nalysis and {S}urvey of the {D}evelopment of {M}utation {T}esting},  
journal = {IEEE Transactions of Software Engineering},  
year = {2009},  
volume = {To appear},  
number = {()},  
pages = {()},  
}
```

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Mark Harman
Mootation COW

Monday, 31 January 2011
COWs

CREST Open Workshop
Typically last week of the month
Aim for last Wednesday (where rooms available)
Discussion based
Recorded and archived
COWs

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Previous COWs
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
Upcoming COWs

9th CREST Open Workshop
Code Provenance and Clone Detection
Date: Tue 23 Nov, 2010
Venue: Lethaby Room, Mary Ward House

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 Lifecycle Software Engineering: Requirements and Management
Date: Wed 23 Feb, 2011
Venue: Engineering Front Executive Suite, Roberts Building
Upcoming COWs

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Thanks

Jian Ren, COW Programme manager
Lena Hierl, Administrative arrangements
Yue Jia, visitor liaison
EPSRC, funding
Attendees and speakers
Thanks

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Lena Hierl, Administrative arrangements
Yue Jia, visitor liaison
EPSRC, funding

Attendees and speakers
Domestics

Fire or other alarm

Toilets

Discussions
Domestics

Fire or other alarm
Toilets

Discussions
Introductions ...