



# VCSS 2012

## 1st International Workshop on Volatility and Complexity of Software Systems

### Call for Papers

The VCSS 2012 workshop is a satellite event of the European Conference on Software Maintenance and Reengineering – IEEE CSMR 2012

**Time and place:** 27<sup>th</sup> March 2012 , University of Szeged, Szeged, Hungary

**Submission deadline:** 27<sup>th</sup> January 2012

**Web:** <http://conferences.ncl.ac.uk/vcss2012/>

#### THEME AND GOALS

Software systems of any significant size bring with them difficulties due to their complexity. These difficulties may be most reported at the maintenance and upgrade stage of the lifecycle, as this is the point at which the expense is typically incurred: however, these difficulties are often the manifestations of problems that have been seeded much earlier in development. At the heart of many of the problems is a failure to deal with the "change-proneness" or volatility of the software system artefacts. Software volatility is also an indicator of roots and sources of growth of complexity of the software system. Thus, understanding better the driving factors behind software volatility is key to improve the development process of software systems and also to impose stricter controls on the complexity of expanding software systems.

A large-scale system may be complex by design, or may have arrived in that state as a result of integration over time of a number of component systems, patching of existing systems or wrapping acquired components-off-the-shelf (COTS) items, or a combination of these things. As a result, the extent to which the system as a whole can be understood, and the extent to which interactions between subsystems can be analysed, is compromised. Overall the complexity of the software system may hinder considerably the comprehensibility of the software system, especially the integration of its components and the evolution of the relationships between these components. Thus, having more efficient ways to identify, represent, visualise and interpret complexity aspects of large-scale software systems will help software engineers to get a handle on such systems, improve their intuitive understanding of how the system works and evolves, and be more efficient in limiting and reducing the complexity growth of the system.

## TOPICS

The workshop is concerned with approaches to address, measure, and control volatility and complexity in complex software systems. Topics of interest include, but are not limited to:

- \* The definition and evaluation of metrics for assessment of the volatility of a software system
- \* Metrics based on complex systems analysis methods (e.g. network metrics)
- \* Identification of the most change-prone artefacts of a system
- \* Architectural approaches for containing the spread of changes through the system
- \* Probabilistic reasoning about quality and functionality of software systems using software complexity and volatility metrics
- \* Evolution of volatility and complexity of large-scale software systems
- \* Dynamic visualisation of the behaviour and evolution of software systems
- \* Visualisation supported reasoning about complex software systems

## PAPER SUBMISSION

Prospective presenters should submit short position papers or full papers (max. 10 pages in the format used by the CSMR conference). All accepted papers will be published online on the workshop website. The organisers intend to publish formal proceedings after the workshop.

See the workshop website for further submission details.

## IMPORTANT DATES

Abstract submission	20 January 2012
Paper submission	27 January 2012
Notification of acceptance	17 February 2012
Camera ready	2 March 2012
Workshop date	27 March 2012

## ORGANISERS

Workshop chairs

Peter Andras, Newcastle University

Claire Ingram, Newcastle University

Anjan Pakhira, Newcastle University

Steve Riddle, Newcastle University

## PROGRAMME COMMITTEE

David Budgen, Durham University,

Filomena Ferrucci, University of Salerno

Wahab Hamou-Lhadj, Concordia University, Montreal

Huzefa Kagdi, Wichita State University

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## CONTACT

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