

# Call For Papers: CyberPatterns 2014

The 3<sup>rd</sup> International Workshop on Cyberpatterns: From Big Data to Reusable Knowledge

(<http://tech.brookes.ac.uk/CyberPatterns2014/>)

at

The 8<sup>th</sup> International Symposium on Service-Oriented System Engineering (SOSE 2014)

(<http://sose2014.com>)

Oxford, UK. April 7 – 11, 2014

## IMPORTANT DATES

- *Paper submissions:*  
Jan. 3, 2014
- *Notification:*  
Jan. 17, 2014
- *Camera-ready copies:*  
Feb. 7, 2014

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## PROGRAM COMMITTEE

Please see workshop website.

## WORKSHOP WEBSITE

<http://tech.brookes.ac.uk/CyberPatterns2014/>

## SUBMISSION WEBSITE

<https://www.easychair.org/conferences/?conf=cyberpatterns2014>

## SPONSORS:

- IEEE Computer Society
- BCS Information Security Specialist Group
- BCS Formal Aspects of Computing Specialist Group
- BCS Cybercrime Forensics Specialist Group
- Digital Forensics Magazine

## THEME AND GOAL

A pattern represents a discernible regularity in the world or in manmade designs. In the prescriptive view, a pattern is a template from which instances can be created; while in the descriptive view, the elements of a pattern that repeat in a predictable manner can be observed and recognised. Similar to theories in sciences, patterns explain and predict regularities in a subject domain. In a complicated subject domain like cyberspace, there are usually a large number of patterns that each describes and predicts a subset of recurring phenomena, yet these patterns can interact and interfere with each other and be coordinated and composed together. The pattern-oriented research method studies a subject domain by identifying the patterns, classifying and categorising them, organising them into pattern languages, scoping their boundaries, investigating the interactions between them, devising mechanisms and operations for detecting and predicting their occurrences, and facilitating their instantiation or simulation.

The workshop is the successor to the two Cyberpatterns workshops run in Abingdon, Oxford in 2012 and 2013. Cyberpatterns 2014 workshop will continue with an expanded scope beyond the previous focus on security. The theme of the workshop is cyberpatterns, i.e. patterns in cyberspace. Typical examples of such cyberpatterns include *user behaviour patterns*, *server workload patterns*, *network traffic patterns*, *social network patterns* (such as Small World and Power Law of scale-free networks), *recommendation and system usage patterns*, *Web usability patterns*, *attack patterns*, *security patterns*, *patterns of vulnerabilities*, etc.

With the availability of large volumes of data that are observed and recorded in cyberspace, and the rapid development of big data processing techniques and facilities, a key scientific and engineering research question is *how to discover patterns from big data*. The goal of the workshop is to provide an international forum for researchers and practitioners to exchange research results, identify practical and research problems, and envision research directions that address this problem.

## TOPICS

The topics cover all aspects of cyberpatterns, including, but not limited to, the following:

1) *Scientific foundation* of pattern-oriented research methods for systematic analysis of big data in order to discover the reusable knowledge.

2) *Engineering practice* in the development of platforms, algorithms and tools for analysis of big data for pattern discovery and applications.

3) *Construction of infrastructure* for a sharable knowledge-base of cyberpatterns, e.g. in aiding system design for practitioners and teaching students, with possible tool support to guide usage by developers.

4) *Experiments and case studies* in developing and using cyberpatterns, as well as experience reports.

5) *Identification of research problems* and understanding issues that hamper wider adoption of cyberpatterns and suggesting remediation measures.

6) *Future vision* of the use of cyberpatterns in novel cyber domains, such as the cloud or cyberphysical systems, and innovative uses of design patterns such as in pattern recognition.

Indicative topics include, but are not restricted to:

- Security, attack, advanced cyber threat and forensic patterns
- Design patterns, dependable and trustworthy patterns
- Enterprise and architectural patterns
- User behavior, system usage, network traffic patterns
- Patterns in social network, cyberphysical and cloud systems
- Big data, data mining, machine learning, statistical data analysis
- Pattern visualization, simulation, anomaly detection

## SUBMISSION

The submissions must in IEEE Conference Proceedings Format. The page limit is 6 pages for full papers and 2 pages for position papers.

Submissions must be in PDF format and uploaded to the submission website at the following URL:

<https://www.easychair.org/conferences/?conf=cyberpatterns2014>

Each submission will be reviewed by three PC members and selected according to its technical quality, relevance, originality, significance and clarity.

## PUBLICATION OF THE PROCEEDINGS

The proceedings will be published as a part of SOSE 2014 conference proceedings and included in the IEEE Digital Library. We are in discussion with Springer about a second Cyberpatterns book including best papers from the workshop. Each accepted paper must have an author registered for the conference and present the paper for it to be included in the proceedings.