

CALL FOR PAPERS

1) Title of the workshop

7th ECOOP Workshop on Quantitative Approaches in Object-Oriented Software Engineering (QAOOSE'2003)

2) Abstract

Quantitative approaches in the OO field is an active research area that aims at developing and evaluating methods, techniques, tools and guidelines to improve the quality of software products and the efficiency and effectiveness of software processes. The research topics usually include a strong focus on applying a scientific methodology based on data collection (either by objective measurements or subjective assessments) and analysis (e.g. by statistical, artificial intelligence or operations research techniques). In many large software development companies, measures help software managers, customers and users to characterize, assess, and improve the quality of software products. Estimation models based on software measures are also used to perform risk analysis and to assess software maintainability, reusability or reliability.

Nevertheless, much work is yet to be done to investigate analytically and empirically the relationships between OO design aspects, either structural or behavioral ones, and the resulting software quality characteristics of resulting deliverables. For instance, several methods and techniques such as application frameworks, design patterns, aspect-orientation, component-based development and others that rely upon the OO paradigm, have been proposed in order to improve software engineering productivity and software quality. To improve our understanding on their impact on products developed using them, we must be able to assess the quality of such products via adequate software product and process measures.

Over the years the QAOOSE workshop series has built an active research community. We expect new participants to join this community on QAOOSE'2003 edition.

3) Format

QAOOSE'2003 aims to shed some light on recent research results and to point out future research directions that might interest not only the academic community but also industry. Like in previous years, submissions of position papers are invited, but not limited, to the areas of metrics collection, quality assessment, metrics validation, and process management. During the workshop there will be some sessions for presenting position papers and a plenary working session for summarizing, evaluating and assembling the new research results and for identifying future research opportunities.

The workshop organizers will select a subgroup of the accepted submissions for oral presentation. However, all accepted position paper submissions will be included in the workshop proceedings to be distributed to the participants.

4) Rules for attending

Potential attendees must submit a position paper or experience report in English. All submitted position papers will be formally reviewed by the workshop organizers for originality, relevance, quality and clarity. All authors of accepted submissions will be invited to participate in the workshop. We especially encourage the submission of new ideas, even if not supported by validated research. All submissions must include the author(s) name, affiliation, phone, fax and e-mail address. Authors must indicate explicitly the topic(s) addressed in the submission paper. Those topics are organized in four areas:

Area C (Metrics Collection)

- Automatic support for sharing research hypotheses, data and results
- Standards for the collection, comparison and validation of metrics
- Embedding metrics in OO CASE tools
- Evaluation of OO metrics collection tools
- Automating collection from formal metrics definition
- Metrics collection in the development process (measurement planning)
- Public repositories for measurement data

Area A (Quality Assessment)

- Measuring non-functional requirements of OO systems
- Quantitative OO and CB design heuristics
- Metric-based design refactoring
- OOD and CBD quality characteristics assessment
- Quantitative impact analysis in OO and CB architectures
- Quantitative assessment of OO analysis/design patterns and frameworks
- Quantitative assessment of behavioral modeling in OO models
- Quantitative assessment of OR and OO database schemata

Area V (Metrics Validation)

- Meta-level metrics
- Formal and empirical validation of OO metrics
- OO metrics and Measurement Theory
- Validation techniques and their limits
- Standard data sets for metrics validation
- Limitations of quality estimation techniques

Area P (Process Management)

- Reliability and rework effort estimates based on design measures
- OO reuse evaluation
- Resource estimation models for OO and CB software development
- Quantitative tracking of OO development activities
- Empirical studies on the use of OO measures for process management
- Measurement support in a CBSE life cycle

We particularly encourage papers reporting the use of quantitative methods by practitioners in OO or CB software development processes. Submissions must conform to the following format guidelines:

Paper format: A4

Size: 4 to 12 pages

Spacing: 1,5 lines

Font: 12 points

Margins: 2,5 cm

File type: PDF, RTF or HTML

Style: free!

Submission address: qaoose2003@di.fct.unl.pt

5) Attendee background

This workshop will provide a forum to discuss the current state of the art and the practice in the field of quantitative approaches in the OO field. A blend of researchers and practitioners from industry and academia is expected to share recent advances in the field, success or failure stories, lessons learned, and will seek out as yet unidentified fundamental problems arising in this field that will have chances to become good research opportunities.

This workshop will be of interest to software quality researchers, object-oriented and component-based methodologists, software metrics scientists and users, practitioners with interests in reuse, frameworks, analysis, design and programming as well as those interested in the management of object-oriented and component-based development projects. We will expect our workshop attendees to have a reasonably good knowledge of the object-oriented paradigm and a fair knowledge of software engineering techniques, including the application of quantitative measurement.

6) Important Dates

- Submission of position papers due: April 25, 2003
- Notification of acceptance: May 19, 2003
- Preliminary program available: May 26, 2003
- Deadline for early registration: (to be announced)
- Workshop: July 21 or 22, 2003

7) Minimum number of attendees

Ten (10)

8) Maximum number of attendees

Thirty (30)

9) Contact info and affiliation of the organizers

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10) Info about the Workshop Reader

Springer-Verlag will publish the ECOOP 2003 WS Reader as a LNCS volume. This book will include a report from this workshop, written by its organizers. The report will provide a summary of the workshop with the major issues discussed and the conclusions drawn from the discussion. The report may also include additional info about the current research being carried out in the area and open research directions on the workshop themes. Although the position papers submitted to the workshop will not be included there, a summary of the presentations made by each of the accepted submissions for oral presentation will. We recall that all accepted position papers will be included in the workshop proceedings.

11) Additional info

The QAOOSE'2003 home page is:

- <http://ctp.di.fct.unl.pt/QUASAR/QAOOSE2003>

This workshop is a direct continuation of six successful workshops, held at previous editions of ECOOP in Malaga (2002), Budapest (2001), Cannes (2000), Lisbon (1999), Brussels (1998) and Aarhus (1995). The QAOOSE workshops have attracted participants from both academia and industry involved or simply interested in the application of quantitative methods in object oriented software engineering research and practice. You can find additional information in:

- The "Quantitative Approaches in Object-Oriented Software Engineering" workshop at ECOOP'2002 in Malaga (organizers: Mario Piattini, Fernando Brito e Abreu, Geert Poels, Houari Sahraoui) - <http://alarcos.inf-cr.uclm.es/qaoose2002>
- The "Quantitative Approaches in Object-Oriented Software Engineering" workshop at ECOOP'2001 in Budapest (organizers: Fernando Brito e Abreu, Brian Henderson-Sellers, Mario Piattini, Geert Poels, Houari Sahraoui) - http://www.iro.umontreal.ca/~sahraouh/qaoose01/QAOOSE01_program.html
- The "Quantitative Approaches in Object-Oriented Software Engineering" workshop at ECOOP'2000 in Cannes (organizers: Fernando Brito e Abreu, Geert Poels, Houari Sahraoui, Horst Zuse) - <http://ecoop2000.unice.fr/Program/Technical/Workshops/w10.html>
- The "Quantitative Approaches in Object-Oriented Software Engineering" workshop at ECOOP'99 in Lisbon (organizers: Fernando Brito e Abreu, Walcelio Melo, Houari A. Sahraoui, Horst Zuse) - <http://ecoop99.di.fc.ul.pt/techprogramme/w20.html>
- The "Object-Oriented Product Metrics for Software Quality Assessment" workshop at ECOOP'98 in Brussels (organizers: Houari A. Sahraoui, Sandro Morasca, Walcelio Melo) - <http://www.crim.ca/~hsahraou/oopm.html>
- The "Quantitative Methods for Object-Oriented Systems Development" workshop at ECOOP'95 in Aarhus (organizers: Horst Zuse, Brian Henderson-Sellers, Fernando Brito e Abreu) - <http://ctp.di.fct.unl.pt/QUASAR/ECOOP95>