Call for Papers GPCE'05

4th International Conference on Generative Programming and Component Engineering

Sep 29 - Oct 1, 2005, Tallinn (Estonia)

`http://www.gpce.org/05`

Sponsored by ACM SIGPLAN, in cooperation with ACM SIGSOFT
co-located with ICFP'05 and TFP'05

Consult `http://www.gpce.org/05` for **up-to-date** and **detailed information**

Scope. Generative and component approaches have the potential to revolutionize software development in a similar way as automation and components revolutionized manufacturing. Generative Programming (developing programs that synthesize other programs), Component Engineering (raising the level of modularization and analysis in application design), and Domain-Specific Languages (elevating program specifications to compact domain-specific notations that are easier to write and maintain) are key technologies for automating program development.

GPCE arose as a joint conference, merging the conference on Generative and Component-Based Software Engineering (GCSE) and the workshop on Semantics, Applications, and Implementation of Program Generation (SAIG). The goal of GPCE is to provide a meeting place for researchers and practitioners interested in cutting edge approaches to software development. We aim to foster further cross-fertilization between the software engineering research community and the programming languages community, in addition to supporting the original research goals of both the GCSE and the SAIG communities.

Submissions. (15 pages in LNCS style) reporting research results and/or experience related to the topics above (PC co-chairs can advise on appropriateness). We especially encouraged original high-quality reports on applications to real-world problems, relating ideas and concepts from several topics, or bridging the gap between theory and practice.

Topics. GPCE seeks contributions in software engineering and in programming languages related (but not limited) to:

Generative programming

- Reuse, meta-programming, partial evaluation, multi-stage and multi-level languages, step-wise refinement
- Semantics, type systems, symbolic computation, linking and explicit substitution, in-lining and macros, templates, program transformation
- Runtime code generation, compilation, active libraries, synthesis from specifications, development methods, generation of non-code artifacts, formal methods, reflection

Generative techniques for

- Product lines and architectures
- Embedded systems
- Model-driven architecture

Component-based software engineering

- Reuse, distributed platforms, distributed systems, evolution, analysis and design patterns, development methods, formal methods

Integration of generative and component-based approaches

Domain engineering and domain analysis

- Domain-specific languages (DSLs) including visual and UML-based DSLs

Separation of concerns

- Aspect-oriented and feature-oriented programming,
- Intentional programming and multi-dimensional separation of concerns

Industrial applications

Important dates

Apr 10, 2005 : Abstracts due
Apr 15, 2005 : Papers/demos due
May 30, 2005 : Notification

Sep 27-28, 2005 :
GPCE workshops and tutorials

Sep 29 - Oct 1, 2005 :
GPCE papers and demos

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William Scherlis
Yannis Smaragdakis
Walid Taha
Todd Veldhuizen

GPCE Tutorials giving a deeper or broader insight than conventional lectures (they extend over a half or a full day):

T1: Challenges and Best Practices of Generative Software Engineering in the Context of Large Complex Business Applications (Presenter: M.M.Davydov)
T2: Implementing Domain-Specific Modelling Languages andGenerators (Presenters: R.Pohjonen and J-P.Tolvanen)
T3: Multi-stage Programming in MetaOCaml (Presenters: W.Taha and C.Calcagno)

GPCE Workshops providing intensive collaborative environments, where generative and component technologists meet to discuss (and solve) challenging problems facing the field:

W1: Second MetaOCaml Workshop (Organizers: K.Swadi and W.Taha)
W2: Young Researchers Workshop (Organizers: D.R.Dechow, D.Foetsch, S.Kiebusch, S.Perugini, M.J.Rutherford and D.Shestakov)