



<http://www.gpce.org>

# GPCE 2015

## 14th International Conference on Generative Programming: Concepts & Experiences (GPCE)

Oct 26-27, 2015, Pittsburgh, PA, USA (Co-located with SPLASH and SLE)  
<http://www.gpce.org>

GPCE is a venue for researchers and practitioners interested in techniques that use program generation, domain-specific languages, and component deployment to increase programmer productivity, improve software quality, and shorten the time-to-market of software products. In addition to exploring cutting-edge techniques of generative software, our goal is to foster further cross-fertilization between the software engineering and the programming languages research communities.

### General Chair

Christian Kaestner (Carnegie Mellon U)

### Program Chair

Aniruddha Gokhale (Vanderbilt U)

### Publicity Chair

Faruk Caglar (Vanderbilt U)

Tomofumi Yuki (INRIA Rhone-Alpes)

### Program Committee

On web page

### Keynote Speaker

Prof. Priya Narasimhan (Carnegie Mellon Univ and CEO, Yinzcam)

### Submissions

Research papers: 10 pages (SIGPLAN style)  
Tool demos and short papers: 4 pages  
Workshops handled by SPLASH 2015

Abstract submissions: June 8, 2015

Submission of papers: June 15, 2015

Author notification: July 24, 2015

Camera Ready: August 7, 2015

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Generative and component approaches and domain-specific abstractions are revolutionizing software development just as automation and componentization revolutionized manufacturing. Raising the level of abstraction in software specification has been a fundamental goal of the computing community for several decades. Key technologies for automating program development and lifting the abstraction level closer to the problem domain are **Generative Programming** for program synthesis, **Domain-Specific Languages** (DSLs) for compact problem-oriented programming notations, and corresponding **Implementation Technologies** aiming at modularity, correctness, reuse, and evolution. As the field matures **Applications** and **Empirical Results** are of increasing importance.

GPCE seeks contributions on all topics related to generative software and its properties. Topics of interest include, but are not limited to:

### Generative software

- **Domain-specific languages** (language extension, language embedding, language design, language theory, language workbenches, interpreters, compilers)
- **Product lines** (domain engineering, feature-oriented and aspect-oriented programming, pre-processors, feature interactions)
- **Metaprogramming** (reflection, staging, partial evaluation)
- **Program synthesis**
- **Implementation techniques** and tool support (components, plug-ins, libraries, metaprogramming, macros, templates, generic programming, run-time code generation, model-driven development, composition tools, code-completion and code-recommendation systems)

### Practical Applications and Empirical evaluations

- **Empirical evaluations** of all topics above (user studies, substantial case studies, controlled experiments, surveys, rigorous measurements)
- **Application** areas and engineering practice (Cloud Computing, Internet of Things, Cyber Physical Systems, Mobile Computing, Software Defined Networking, High Performance Computing, Patterns and Middleware, Development methods)

### Properties of generative software

- **Correctness** of generators and generated code (analysis, testing, formal methods, domain-specific error messages, safety, security)
- **Reuse and evolution**
- **Modularity**, separation of concerns, understandability, and maintainability
- **Performance** engineering, nonfunctional properties (program optimization and parallelization, GPGPUs, multicore, footprint, metrics)

We particularly welcome papers that address some of the **key challenges** in the field, such as, synthesizing code from declarative specifications □ supporting extensible languages and language embedding □ ensuring correctness and other nonfunctional properties of generated code □ proving generators correct □ improving error reporting with domain-specific error messages □ reasoning about generators □ handling variability-induced complexity in product lines □ providing efficient interpreters and execution languages □ human factors in developing and maintaining generators

GPCE encourages submissions about empirical evaluations and applications of generative software, and such papers will be given special consideration during reviewing. See the web site for details.

### Special Journal Issue of Elsevier COMLAN

Authors of top ranked papers in GPCE' 15 will be invited to submit extended versions of their papers for publication in the special issue of COMLAN. The guest editors of this special issue are: Ulrik Pagh Schultz (Univ of Southern Denmark, Denmark), Kenichi Asai (Ochanomizu Univ, Japan), and Aniruddha Gokhale (Vanderbilt Univ, USA).