Call for Papers

XLDI 2012: 1st International Workshop on Cross-model Language Design and Implementation

Affiliated with ICFP 2012, Copenhagen, Denmark, September 10-12, 2012
Sponsored by ACM SIGPLAN

`http://workshops.inf.ed.ac.uk/xldi2012`

Important Dates

Submission:	May 15
Notification:	July 1
Final papers due:	August 1
Workshop:	September 9

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There has recently been a burst of systems research advocating high-performance commodity "big data" or "massively parallel" computing models, often using simpler high-level languages or interfaces as front-ends. This work is often described as part of a shift towards a new "cloud computing" paradigm, but these buzzwords mask the major problems these techniques face: both big data and massively parallel systems currently employ systems-based methods and testing regimes that cannot offer guarantees of safety, security, correctness and evolvability. Language-based techniques, particularly formalization, verification, abstraction, and representation independence, offer the promise to reconcile the performance benefits of new execution models with the advantages of modern programming languages.

Cross-model programming is not a new problem: for example, smooth integration of relational database programming models into general-purpose programming languages has been a long-standing challenge, with some approaches now in mainstream use (such as Microsoft's LINQ). But in the last few years there has been a dramatic increase in the number of domain-specific languages or libraries for interfacing with different computing models (data-parallelism, sensor networks, MapReduce-style fault-tolerant parallelism, distributed programming, Bayesian inference engines, declarative networking, or multi-tier Web programming), as well as techniques for language-integrated querying or processing data over other data models. Cross-model programs that execute in multiple (possibly heterogeneous) environments have much more challenging security, debugging, validation, and optimization problems.

Papers are solicited on topics including, but not limited to:

- Language designs for simplifying cross-model programming with database queries, data parallelism, networking, distributed programming, Web programming, or security primitives
- Formalizations or comparisons of existing languages, libraries or extensions for integrating multiple execution models
- Monads, comprehensions, arrows, applicative functors, and other abstractions for combining or embedding models
- Compilation and implementation techniques for cross-model programs
- Type systems (polymorphism, dependent types, GADTs, modal types, refinement types) to support safe cross-model programming
- Domain-specific embedded languages or libraries, syntax extensions, meta-programming facilities, or staged computation
- Language support for programming with XML, RDF, JSON, or other data interchange formats or Web standards
- Techniques for securing, debugging, performance profiling, optimization, or provenance tracking in cross-model programs

Submissions should consist of short papers of at most 3 pages in ACM SIGPLAN style (`sigplanconf.cls`). Submissions will be accepted electronically; the submission site will be advertised around one month before the submission deadline. Simultaneous submission with another workshop, conference or journal is **not** allowed. An author of each accepted paper is expected to present their paper at the workshop. Accepted papers will be available from the workshop website. Authors will retain copyright.