IEEE Software: Special Issue on Domain-Specific Languages & Modeling

IEEE Software seeks submissions for a special issue on Domain-Specific Languages and Modeling (DSL&M). This issue will focus on benefits that the field’s practitioners and designers observed or quantified, especially scenarios that could not be implemented easily using general-purpose techniques. The issue will explore how mature domain-specific techniques address issues of efficiency, integration, maintainability, and reliability. In addition, articles can address specific challenges associated with DSL&M. Suggested areas of interest include:

- software development process with DSLs;
- state of the art descriptions of DSLs and tools;
- industrial experiences of applying DSLs in practice, including lifecycle issues;
- design of DSLs as language engineering (guidelines, patterns, and frameworks);
- interoperability with mainstream languages, IDEs, and other tools;
- metrics for productivity using DSL and DSM techniques;
- testing, system confidence, test case generation, validation and verification;
- generative techniques, code reuse, code generation;
- semantics for integrating heterogeneous systems, or heterogeneous tools;
- selection/design of DSLs and tools to best suit project requirements; and
- impact of DSLs on software architecture.

Submissions can address many different vertical domains, including:

- automotive, avionics, embedded and other cyber-physical systems software;
- mobile systems, including mobile phones and sensor networks;
- telecom, communications, and software-defined radio systems;
- medical systems, devices and health records systems;
- consumer electronics;
- enterprise systems;
- software and systems integration; and
- hardware/software systems design and co-design.

Outstanding papers will provide empirical evidence, such as usage statistics, metrics for productivity that can be compared to general-purpose languages, code-generation statistics, or other evidence that future practitioners may find useful in evaluating a DSL/DSM approach during project planning. Articles that are overly complex, center on pure research results, or are theoretical in nature, are not appropriate for this issue. Submitted papers should have a decidedly practical orientation, and be written in a style appropriate for practitioners. Papers should cover either:

1. a case study example that is a system or software body already in production, or
2. a large system or software body scheduled for delivery.

Authors of papers that do not satisfy either of the two criteria above should contact the Guest Editors prior to submission.

Manuscripts must not exceed 5,400 word including figures and tables, which count for 200 words each. Submissions in excess of these limits may be rejected without review. Articles deemed appropriate will be peer-reviewed and are subject to further editing for magazine style, clarity, organization and space. We reserve the right to edit the title of all submissions. Be sure to include the name of the area(s) of interest to which your manuscript most closely responds. To submit a manuscript, visit: https://mc.manuscriptcentral.com/cs-ieee.

Please visit http://www.ece.arizona.edu/~sprinkle/dsl/ for direct links to the submission site, author tips, and materials useful for formatting submissions.