

Dear SPLC MIP Award Selection Committee,

We would like to nominate the following paper for an SPLC Most Influential Paper Award:

Don S. Batory: Feature Models, Grammars, and Propositional Formulas. SPLC 2005

The paper lays a conceptual and formal foundation for many lines of research within and beyond SPLC. It connects the three disparate concepts of feature models, grammars, and propositional formulas, and shows how they can be transformed into each other. This de facto unification holds great potential to aid the modeling and analysis of software product lines. This way, advanced concepts of SAT theory became visible and accessible for the product-line community. Batory showed how to use SAT solvers for reasoning about large feature models, which made them even more useful for practical applications.

Since then, a multitude of research techniques and tools picked up on the ideas of Batory's paper, popularizing the whole area of feature-model analysis (see Benavides et al.: Automated analysis of feature models 20 years later: A literature review. *Inf. Syst.* 35(6): 615-636 (2010)) and variability-aware analysis (see Thüm et al.: A Classification and Survey of Analysis Strategies for Software Product Lines. *ACM Comput. Surv.* 47(1): 6:1-6:45 (2014)).

Batory's influential work was also supplemented with tool support as part of the AHEAD tool suite, which itself influenced many other tools and approaches. In particular, the tool GUIDSL, also described in the paper, is still one of the few tools being able to explain conflicts during configuration. In this sense, both the paper and the tool were way ahead of their time back then. A couple of widely used tools today directly rest on the ideas of Batory's paper, including FeatureIDE, TypeChef, and Betty.

Last but not least, beside impact on research and tooling, Batory's work became an integral part of teaching material and courses on software product lines, which demonstrates the impact on education.

We support the nomination in the strongest possible way -- it is hard to imagine a paper that had a larger influence on software product line research than this.

Sven Apel (University of Passau)  
Christian Kästner (Carnegie Mellon University)  
Norbert Siegmund (University of Weimar)  
Janet Siegmund (University of Passau)  
Thomas Thüm (TU Braunschweig)