



# Second Tutorial on the Universal Variability Language

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## ABSTRACT

The Universal Variability Language (UVL) is a textual feature modeling approach that is developed in regular exchange with the community. Over the last years, the adoption of UVL in variability-modeling tools is steadily increasing. Our tutorial covers different aspects of working with UVL, such as editing, format conversion, and automated analysis, and shows recent advances in tool support.

## CCS CONCEPTS

• **Software and its engineering** → **Software product lines;**  
**System modeling languages.**

## KEYWORDS

variability modeling, product line, feature modeling

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## 1 EXTENDED ABSTRACT

The Universal Variability Language (UVL) is a textual representation for specifying feature models. UVL is developed in tight cooperation with the community [7]. Over the last few years, UVL was integrated into various variability-modeling tools [1–6, 8, 9]. Further, in the last year, we made several advances to the language and the tool support for UVL. In this tutorial, we demonstrate the basics of UVL and several tools enabling different facets of variability modeling, such as editing, transformations, and analysis, with UVL. We also show the recent advances in the tool support. Our tutorial should be insightful and comprehensible for researchers and practitioners interested in variability modeling independent of their expertise on that topic.

*Tutorial Overview.* The tutorial is divided into four main sessions with each covering different aspects and tools for UVL. Each session consists of a short introduction and a hands-on part.

**Session 1: Introduction to UVL.** In the first session, we introduce the audience to the basics of UVL. With the participants, we develop UVL models in VSCode with support of our LSP UVLS [5].

**Session 2: UVL in FeatureIDE.** In the second session, we present the integration of UVL in FeatureIDE [8] and explore different parts of product-line development, such as generating configurations.

**Session 3: Model Transformations with TRAVART.** In the third session, we introduce TRAVART [1] and potential use cases of transforming variability models. We then let participants transform several variability models of different type into and from UVL.

**Session 4: Analyzing UVL Models with FLAMA** In the last session, we will cover how UVL can be integrated as a language to analyze variability using a Python-based framework (FLAMA) [2]. Here, we show how different reasoning engines, such as SAT solvers, can be easily applied to the UVL models with the framework.

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