

## CAS 761

Generative programming has recently graduated from an old technique for very specific tasks (like parser generators) to a general purpose tool.

It has clear applications to model-driven software engineering, software product families and feature-oriented programming. It is also finding increasing applications in embedded systems. Unlike other programming paradigms, a proper scientific study of generative programming has only been started quite recently, and introductory material is still sparse.

Topics: generative programming techniques (metaprogramming, templates, staged computation, etc). Domain specific languages. Applications to software product families and software product lines. Domain analysis and feature modelling. If time permits, constraint-based approaches and transformation systems.

After taking the course, the students will be able to perform domain analysis and design, and implement program generators using a number of different technologies.

The course will be conducted through student-led discussions of important papers in the domain.