



Tangible Methods for Formative Prototyping and Fabrication

Open Bachelor/Master Thesis

Background

Personal Fabrication is made possible by hardware like laser cutters, CNC mills or 3D printers. However, unlike traditional craft and fabrication methods, the design of the part is disconnected from its fabrication. Additionally, these devices all either support *addition* of material or *subtraction* of material, but exclude *deformation* of it.

Formative fabrication adds the dimension of deformation to fabrication, as is usual in clay modelling. The process then benefits from the users' dexterity, tangible understanding of the design and the haptic consequences it may have. Ideally, new fabrication systems provide users the chance to leverage high numerical precision while retaining their ability to interact with the material. Such steps can be interleaved with existing prototyping approaches, to benefit from both precision and expression.

Research Goal

Goals of theses in this area cover the development of new, interactive fabrication methods that directly involve the user in modelling or altering geometry. Instead of interacting with software, they interact with the material itself and are supported by an interactive system. A thesis includes related work research, new concepts, their implementation and evaluation. Based on the graduate level (Bachelor, Master) and interest, the scope of the thesis is adapted.

Evgeny Stemasov
Institut für Medieninformatik
027 / 3302

evgeny.stemasov@uni-ulm.de

