

Vorlesung im WS 2011/2012 „Algorithm Engineering for the Engineering Sciences“

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Algorithm engineering aims at establishing a systematic framework – in the spirit of Popper's scientific method – to deal with the (time-consuming and error-prone) process of converting theoretically efficient algorithms and data structures into useful software, rendering implementations and experimentation valuable tools for improved design and precise analysis of algorithms and data structures.

The Algorithm Engineering course discusses methodological and practical issues of this process and in particular it is concerned with:

- The design, effective implementation (as well as its enhancement with speed-up heuristics), fine tuning, debugging, and extensive experimental evaluation of algorithms to the point that they can be of real practical value.
- The development of correct implementations.
- The development of software repositories and platforms that allow for the easy implementation and experimental evaluation of algorithms.
- Methodological issues regarding experimental research on algorithms and data structures.
- Methodological issues involved in the process of converting user requirements into efficient algorithmic solutions and implementations.

The course focuses on fundamental and advanced combinatorial algorithms and data structures. The underlying implementation environment will be C++ along with the STL, LEDA, and BOOST libraries.

Die Vorlesung richtet sich insbesondere an Studierende und Promovierende aus den Ingenieurwissenschaften.

**Ab 18.10.2011 jeweils dienstags, 17:30 – 19:00 Uhr
im SR 236, Informatik-Hauptgebäude 50.34**