Language Technology in Our Time

A panel position

Prof. Dr. Erhard Plödereder
University of Stuttgart
Institute for Software Technology
ploedere@informatik.uni-stuttgart.de

The Academic View

- PL technology is increasingly "environmental"
  - support tools envisaged 30 years ago are slowly becoming state of the art (still not at a maturity that we would like to see)
  - the distinction of PL and tool responsibilities blur
  - "compositional" with heavy reliance on pre-fabricated, often imported components (APIs, etc.)
  - environmental but not ecological

- Software construction is increasingly "experimental"
  - Computer Science is shifting from an analytical calculus-oriented science to an experimental, engineering science
  - bad news for the "correct software by construction" folks
  - less focus on program understanding and analysis (PL-supported or separate)
  - more focus on getting to the experiment quickly
  - niche markets are exceptions to this rule (luckily!)

- Software construction is increasingly generative
  - PL evolution needs to decide on whether to be (part of) the source or the target language
  - depending on the answer, the language directions will be substantially different (expressiveness and strictness vs. simplicity and flexibility)

- the object-oriented programming paradigms are a dead-end
  - in their present form, probably the worst language paradigm for parallel processing on many-cores, which surely is THE future HW-architecture
  - all interesting OO state is global and variable
  - global OO state is heavily fragmented into small instances
  - (could probably be fixed, but who will do it?)
  - (no objections to OO-designs)

The Reality View

C# + C#-like scripting

(??)

Success factors of language X:

- a major player (Microsoft, Sun/Oracle) as proponent, and
- a new and hot application area deemed unreachable without X, or
- a fully upward compatible improvement of a successful but aged language

Cumulus for the Cloud?

Sneed for Social Networks?