PENCIL: Towards a Platform-Neutral Compute Intermediate Language for DSLs

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An intermediate language for DSL compilers and expert developers
- Coding rules, language extensions and directives on top of C
- Assist optimization frameworks by
  - keeping a maximum of information expressed by the DSL
  - eliminating ambiguity for optimizers

PENCIL-Based Tool Flow

PENCIL provides portable performance and correctness across a range of platforms.

Implementation

- Starting point: PPCG optimization framework
  http://freecode.com/projects/ppcg
- Input: C for now; PENCIL to be implemented
- Output: CUDA, OpenMP and OpenCL (soon)

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