

(annotated) AST or C code
of an assembly kernel

Optimization strategy selection

... {AST}

Expression Rewriting

- Generalized loop-invariant code motion (*licm*)
- *Reassociation and factorization (to expose more licm)*
- *Terms expansion*
- *Precomputation of invariant terms*
- *Avoid computation over zero-valued blocks*

... {AST'}

Code Specialization

- Padding and data alignment
- Expression splitting
- Vector-register tiling
- *Translation into BLAS operations*

... {AST''}

General-purpose Optimization

- Loop unroll
- Loop unroll-and-jam
- Loop interchange

C code
assembly kernel

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