

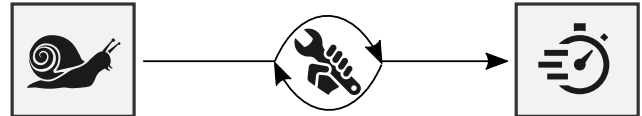
# Optimizing Image Processing with an Extensible Compiler

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## Optimizing N software for M hardware is hard

manual optimization lacks productivity and portability



current domain-specific compilers automate many optimizations

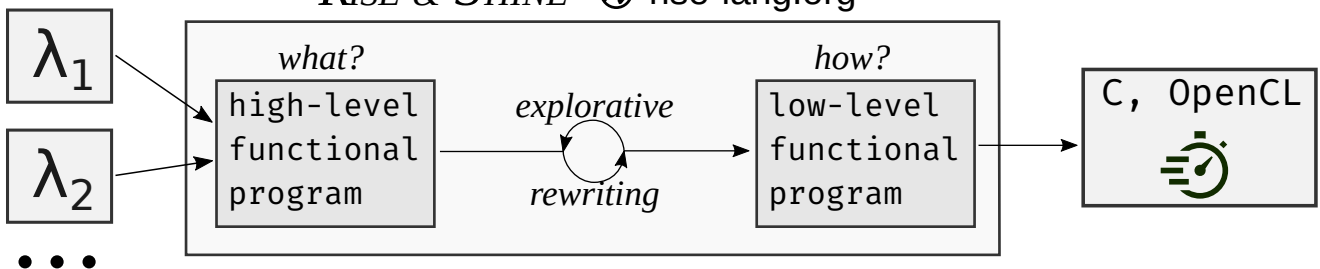
but they are designed for a fixed set of abstractions and optimizations



how do you add abstractions and optimizations ?

## Shine: an extensible domain-agnostic compiler

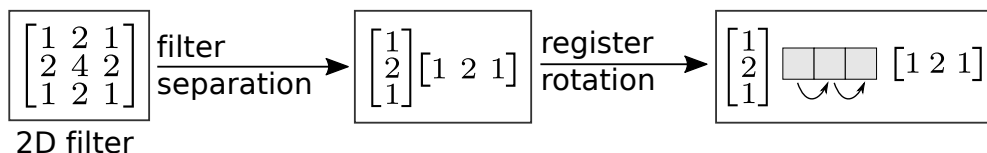
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adding abstractions = adding data-parallel primitives  
 adding optimizations = adding rewrite rules



*Example: binomial blur, reduces noise and detail*



+ 1 rewrite rule

+ 1 primitive, + 2 rewrite rules

