From Interpreter to Compiler and Virtual Machine:
a Functional Derivation*

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Abstract

We show how to derive a compiler and a virtual machine out of a
compositional interpreter. We illustrate the derivation by reconstructing
the Categorical Abstract Machine and by exhibiting the compilers and
virtual machines corresponding to existing abstract machines: Krivine's
machine, the CEK machine, the CLS machine, and the SECD machine.

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