[Fast Frontends] Vectorblox MXP processors

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FPGA Programming

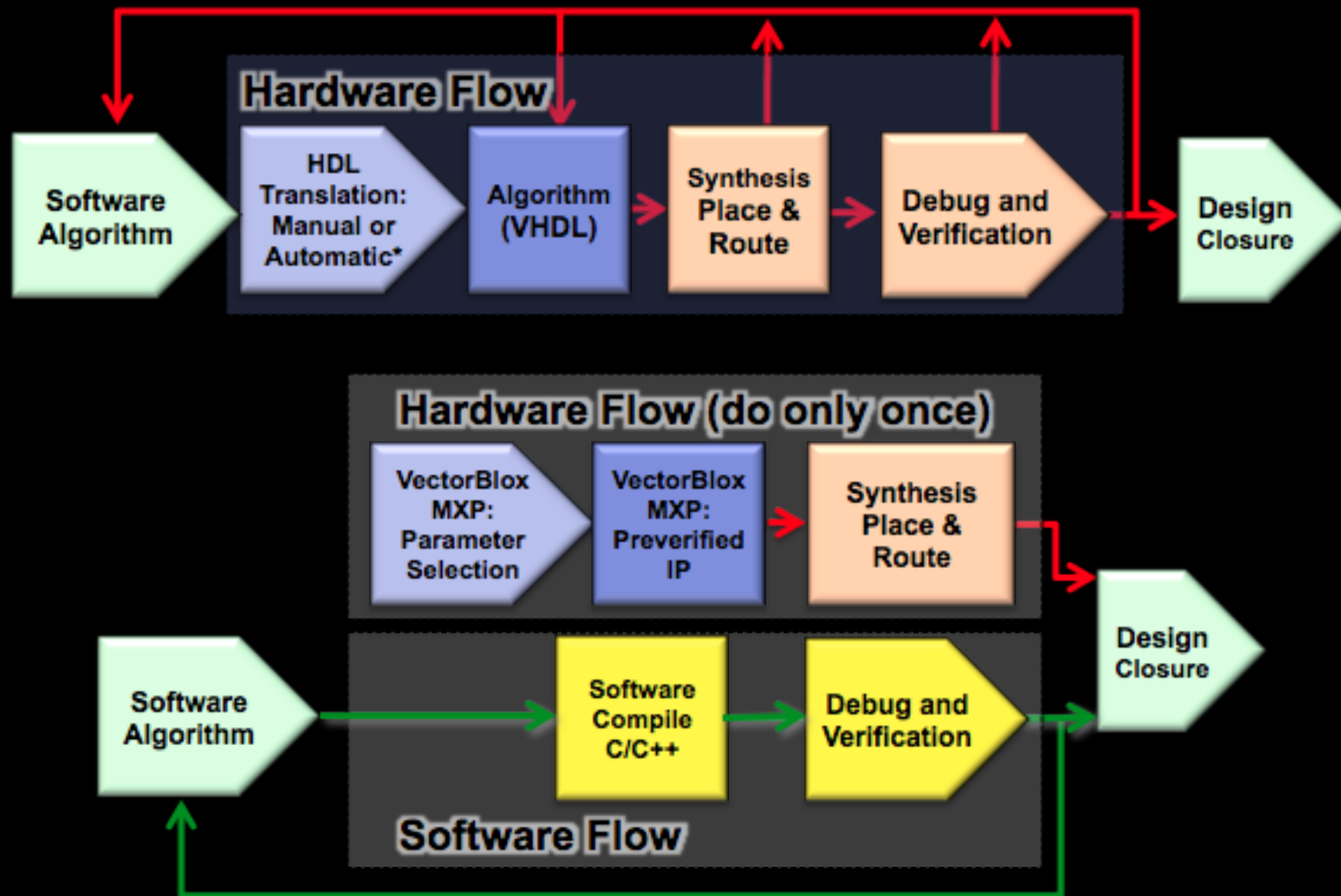**What I think I do**   **What my students think I do**
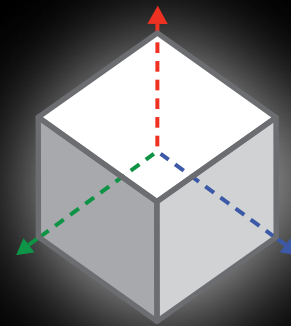
FPGA Teaching Challenge

The FPGA CAD tools suck!

Teaching = How to use the GUI

Development Flow

Alternative

- Overlay the FPGA with a vector processor
  — Zynq SoC (ARM+FPGA)

- Program the FPGA through a C/C++ API
  — ARM core is front-end
  — FPGA is the accelerator

- Functional simulations vastly simplified

- Synthesis is C compilation

VectorBlox
embedded supercomputing

Hard Processor	MXP Soft Vector Processor
ARMv7 32b CPU	
NEON SIMD	
Caches (512 KB)	Vector Scratchpad (64KB)

Zynq SoC

Offchip DRAM (512MB)