

HOW FAST ARE YOUR TESTS?

Compiler-Assisted Test Acceleration Using GPUs

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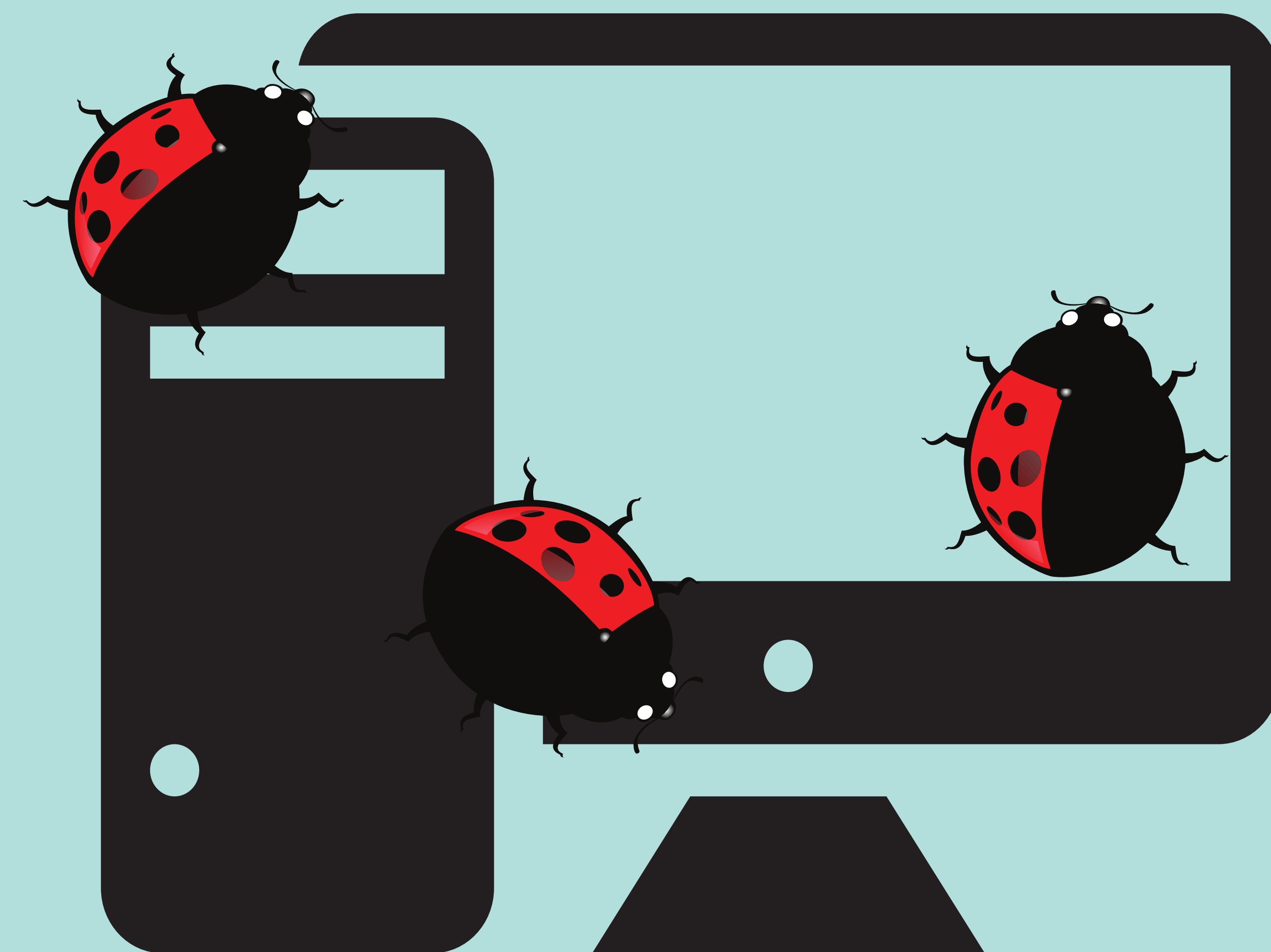


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Software is everywhere
and its correctness is critical.

Functional software testing is crucial,
but extremely time consuming.

SOLUTION
EXECUTE TEST CASES
IN PARALLEL ON THE GPU THREADS

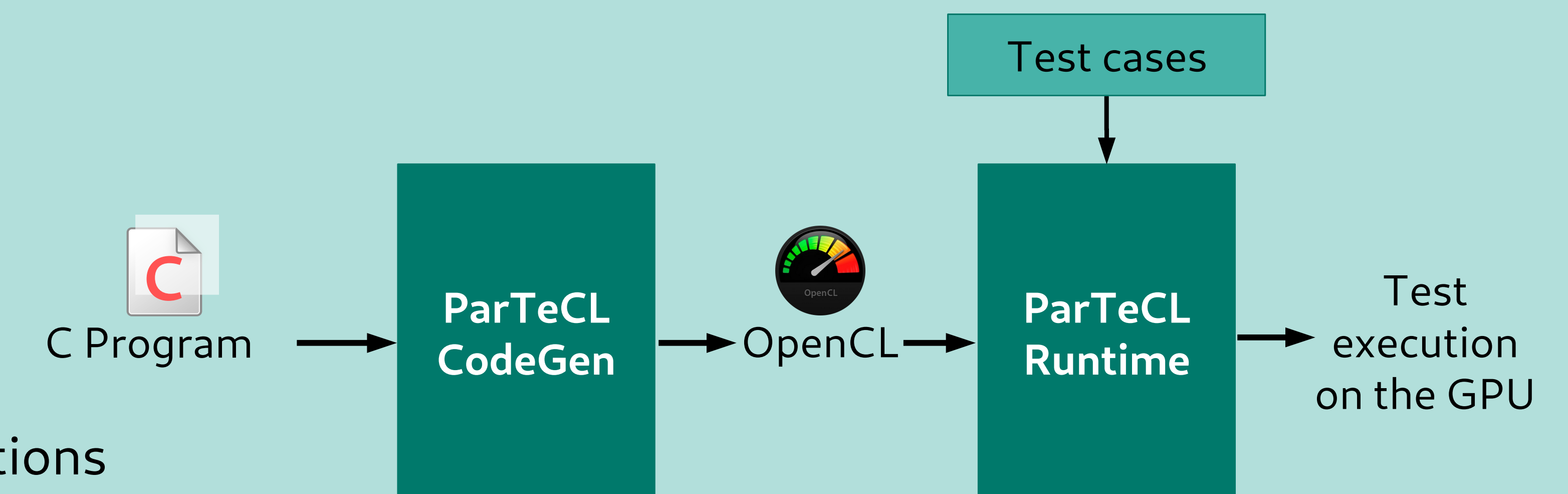


INTRODUCING ParTeCL*

a two-step tool to automatically execute tests on the GPU threads

BENEFITS:

- Software testers and engineers **don't** need specialist GPU knowledge.
- Compiler approach allows automatic transformations of program features typically unsupported on the GPU.
- Testing on the GPU is fully automated.



*Parallel Testing in OpenCL

Available at:
github.com/wyaneva/partectl-codegen
github.com/wyaneva/partectl-runtime

SPEEDUP OF UP TO 53x (avg 16x)

when compared to a single CPU

- Used 9 programs from the **EEMBC benchmark suite** for **embedded applications**.
- Randomly generated **130K test inputs** for each program.
- For all programs testing results from the GPU were **an exact match** to testing results from the CPU.

GPU: Nvidia Tesla K40m
CPU: Intel® Xeon®

