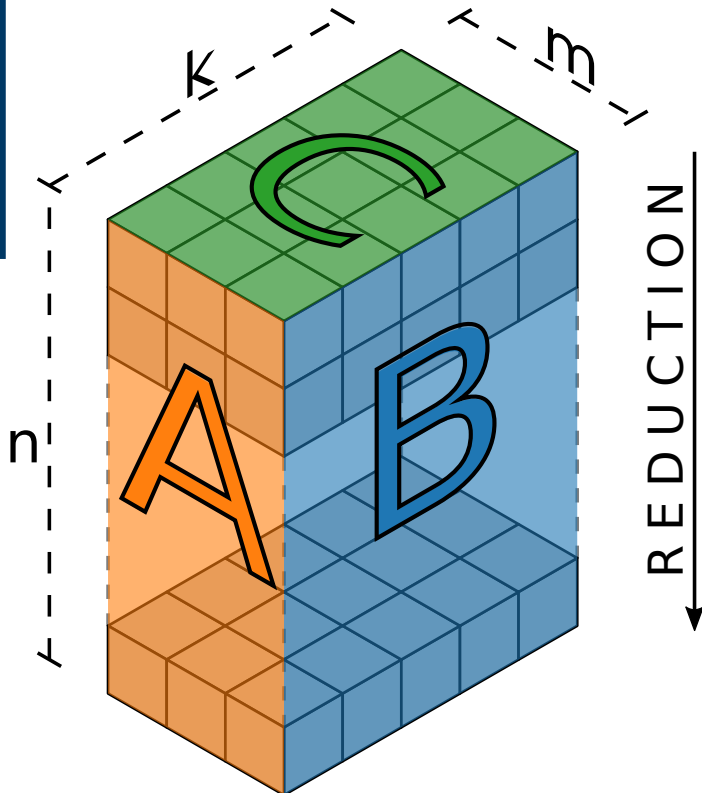


Petalisp - Towards Fully Dynamic Program Optimization

Marco Heisig and Harald Köstler



```

(compute
  (β #' +
    (α #' *
      (reshape A (τ (m n) (n m 1)))
      (reshape B (τ (n k) (n 1 k))))))
  
```

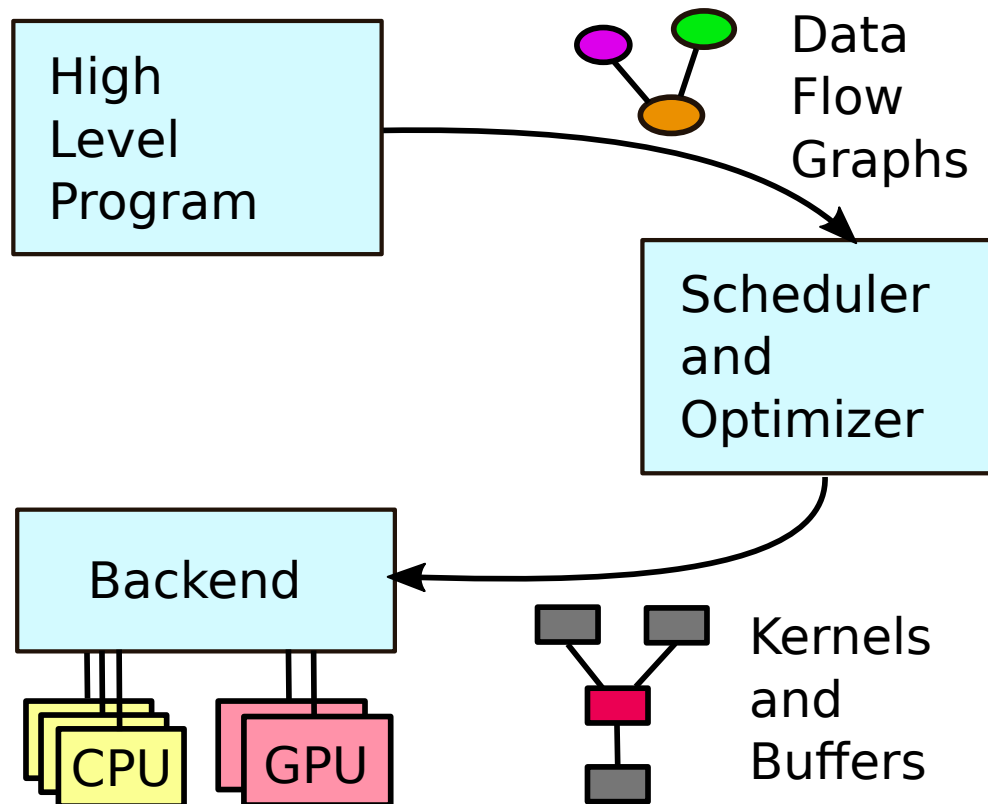
Petalisp - Towards Fully Dynamic Program Optimization

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- A lazy, functional DSL for array operations
- Extremely fast, high-quality code generation (~ 100 microseconds)
- Automatic performance modeling, optimization and parallelization **at runtime**
- Suitable for any workload on structured data with inherent parallelism, such as image processing, machine learning, linear algebra, ...

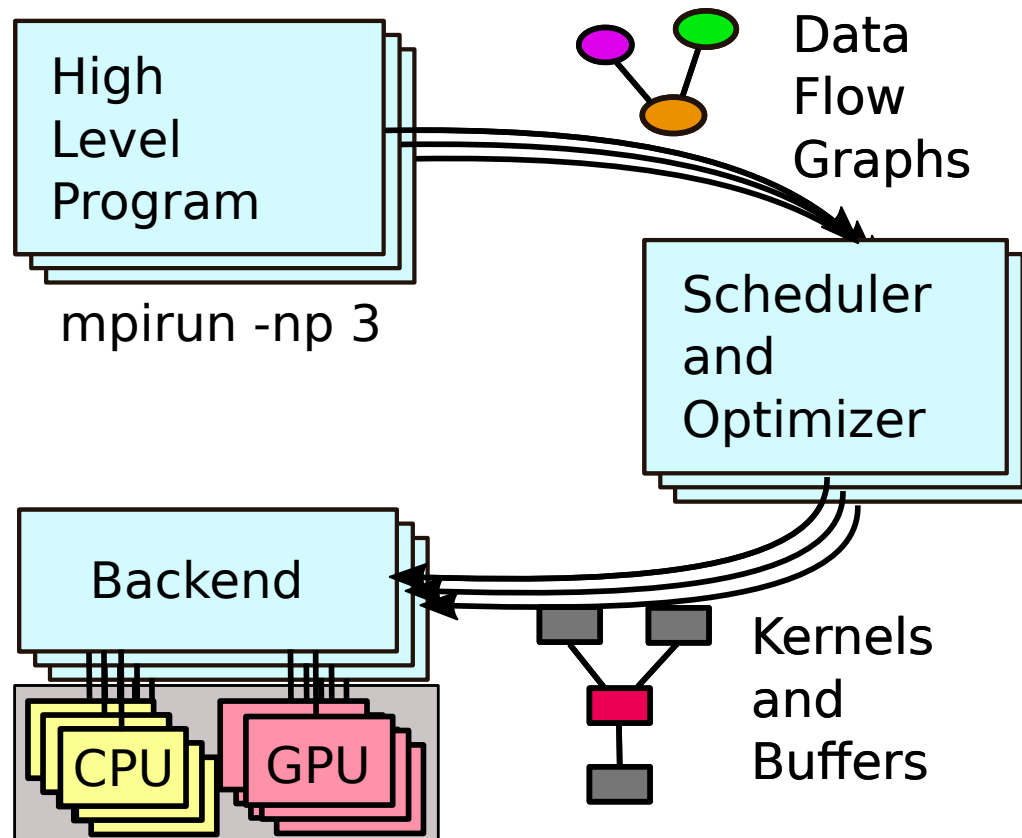
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- **Automatic Parallelization**

Completely decouple algorithms and hardware.

- **Interactive Workflow**

Compilation is done behind-the-scenes and on-the-fly.

- **No More Index Errors**

Erroneous Programs are automatically detected.

Interested? <https://github.com/marcoheisig/Petalisp>

