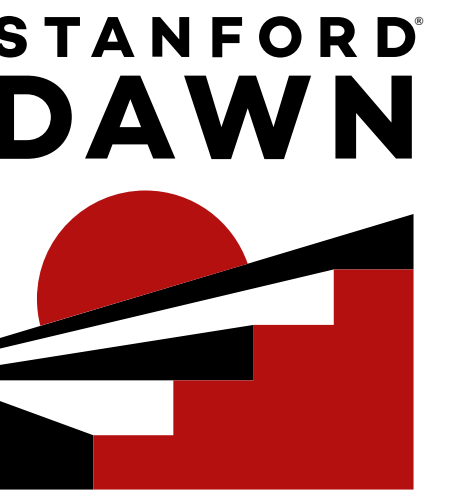# Increasing Dynamism in Plasticine

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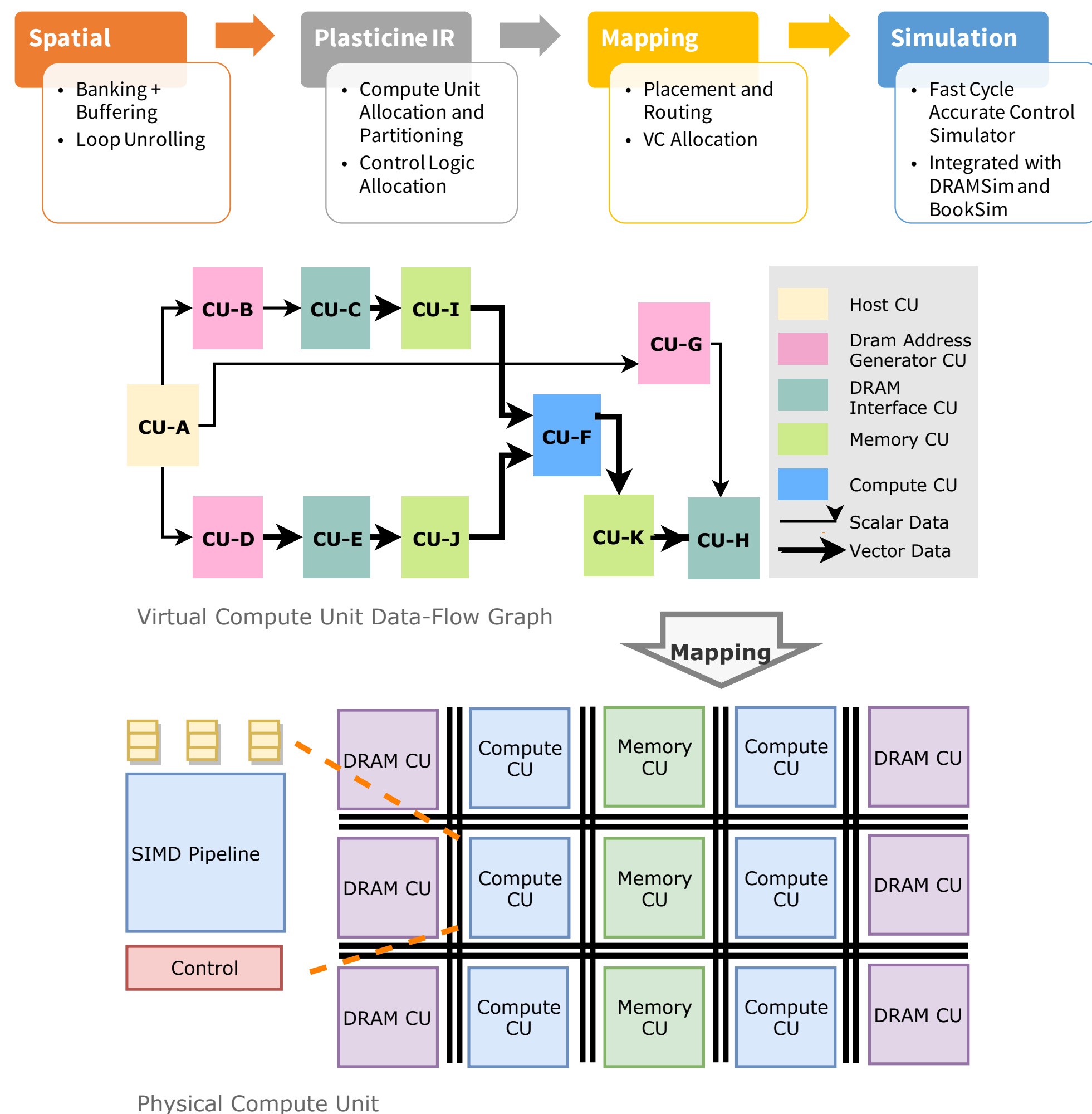yaqiz@stanford.edu

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Background

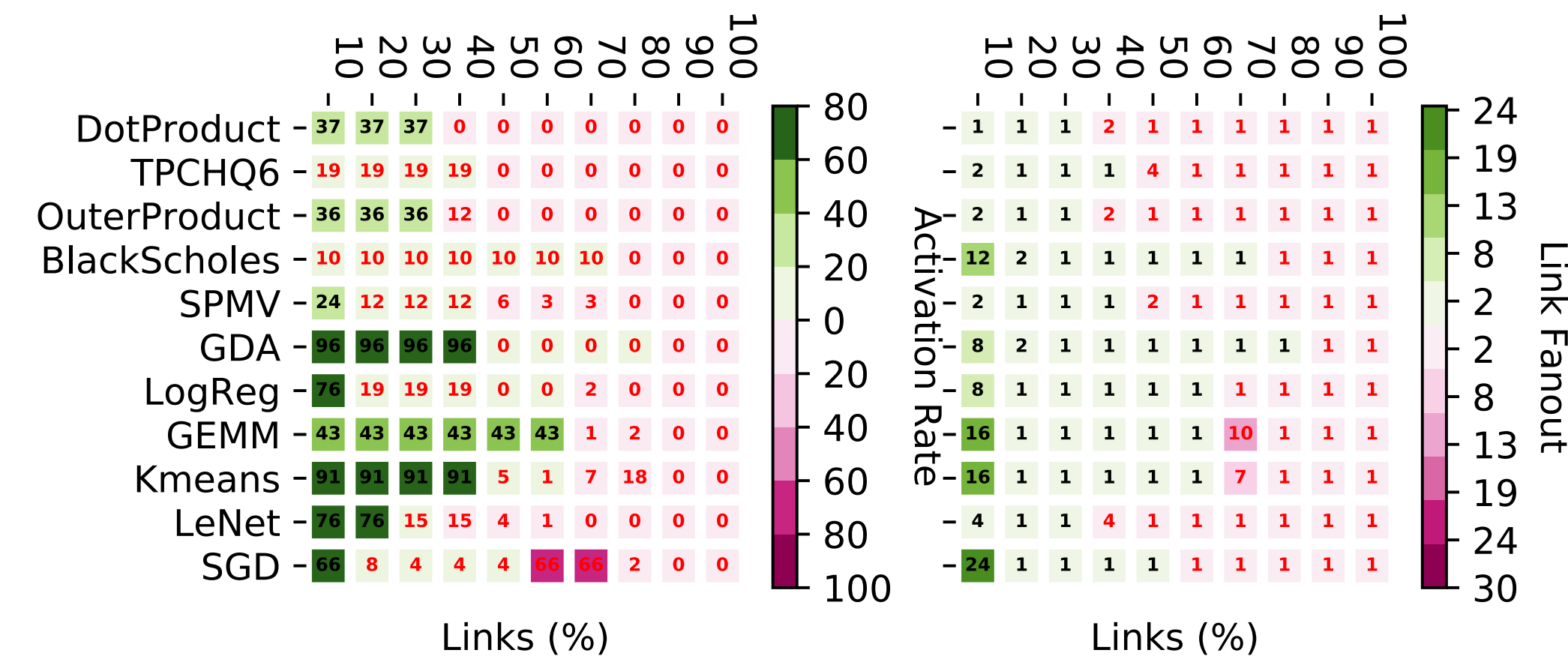*Plasticine* a vectorized Coarse-Grained Reconfigurable Array with

- 6-stage, 16-lane 32-bit floating point SIMD pipelines
- Distributed 256-kByte memories
- DRAM controllers with tile load and scatter-gather support

Plasticine demonstrated an average speedup of XXX and XXX times performance per watt than an FPGA.

How can we retain Plasticine's performance and efficiency while enabling new applications?

Compiler & Mapping Flow

Virtual Compute Unit Data-Flow Graph
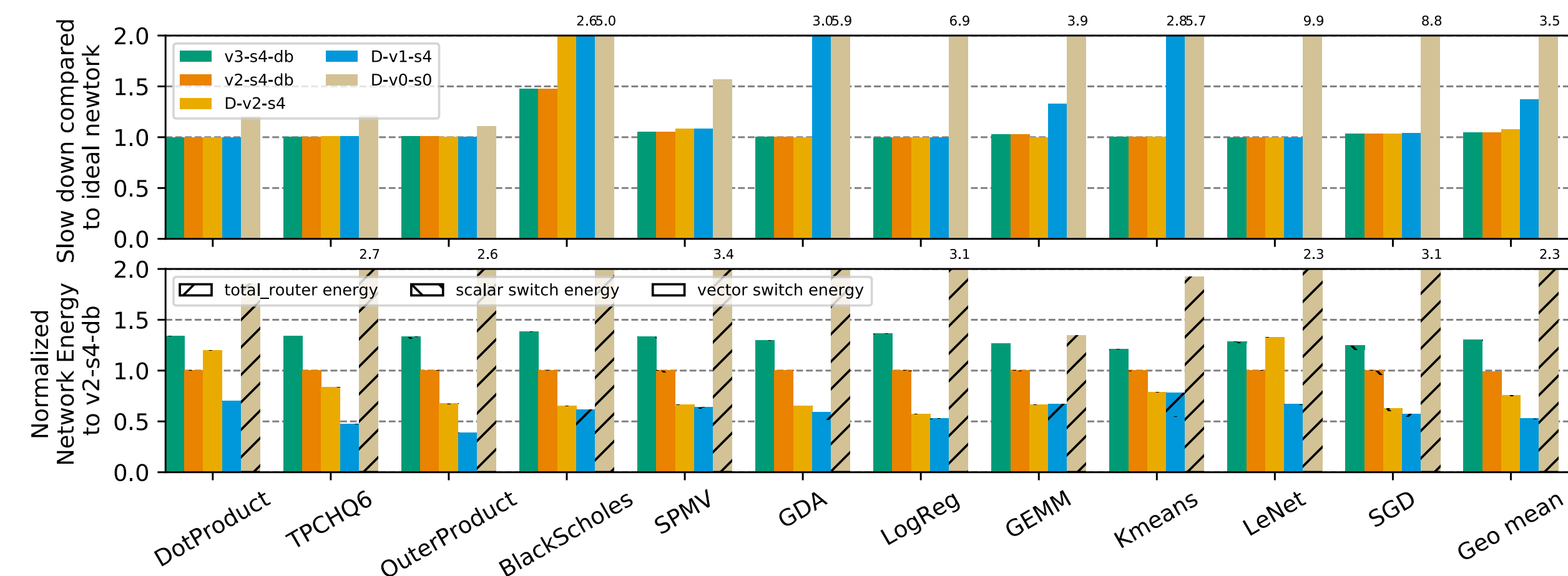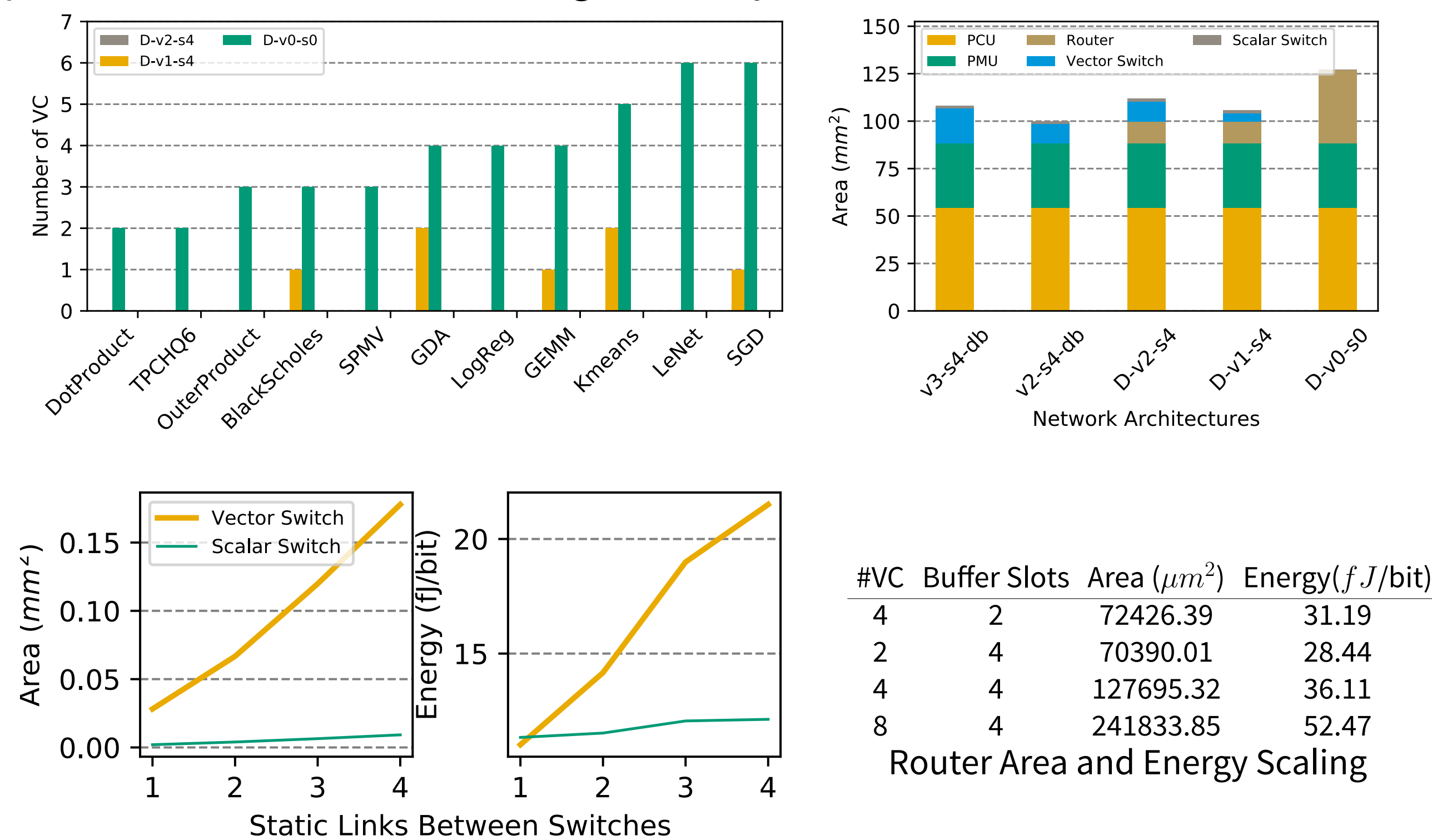
Mapping

Physical Compute Unit

Hybrid Networks

How to improve link utilization given communication characteristics?

- Use static network for high-bandwidth and broadcast links
- Use dynamic network to encorage link sharing on low-activated links
- Specialize networks at different granularity

#VC	Buffer Slots	Area (μm^2)	Energy(fJ/bit)
4	2	72426.39	31.19
2	4	70390.01	28.44
4	4	127695.32	36.11
8	4	241833.85	52.47

Router Area and Energy Scaling

Future Work

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.