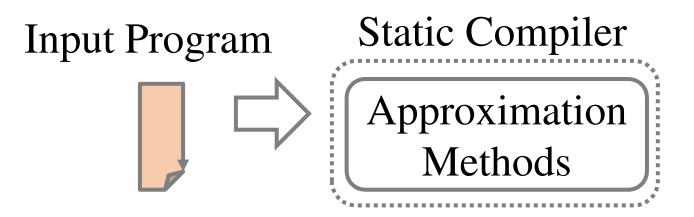
SAGE: Self-Tuning Approximation for Graphics Engines

Mehrzad Samadi¹, Janghaeng Lee¹, D. Anoushe Jamshidi¹, Amir Hormati², and Scott Mahlke¹

University of Michigan¹, Google Inc. ²

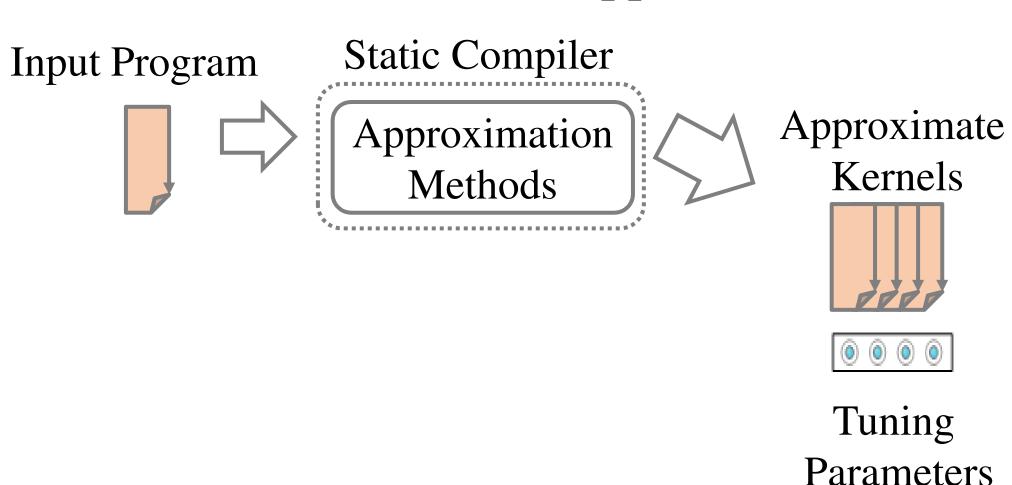
GPU Specific Approximation

Goal: Hardware-aware approximation



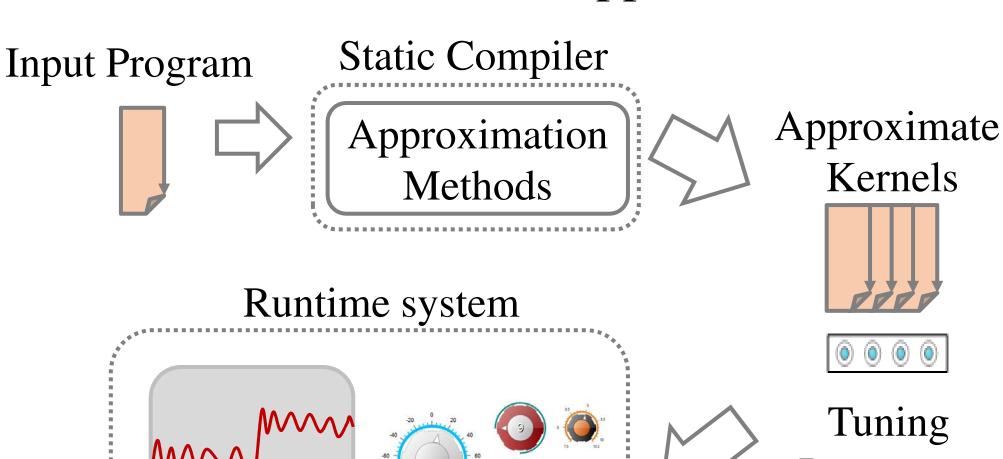
GPU Specific Approximation

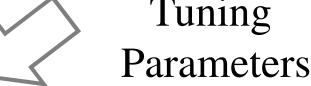
Goal: Hardware-aware approximation



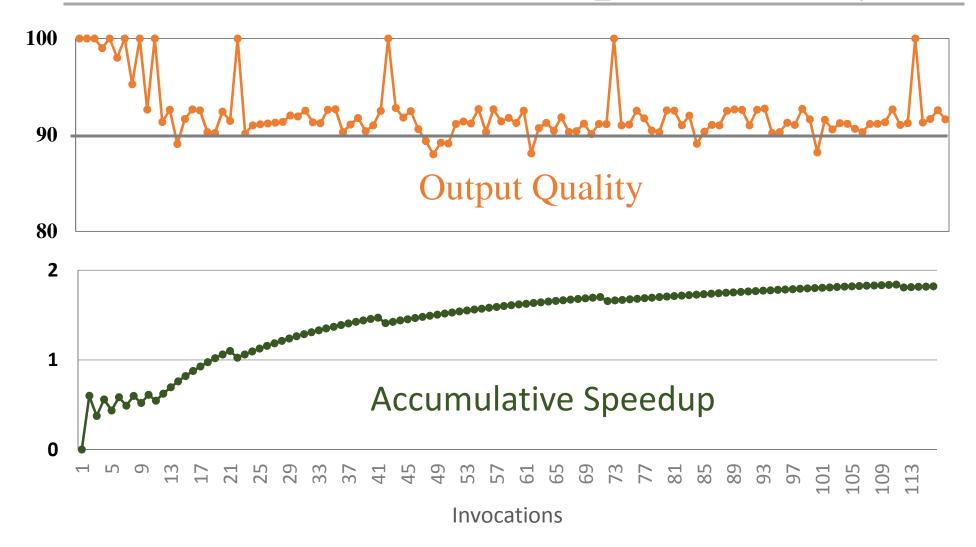
GPU Specific Approximation

Goal: Hardware-aware approximation

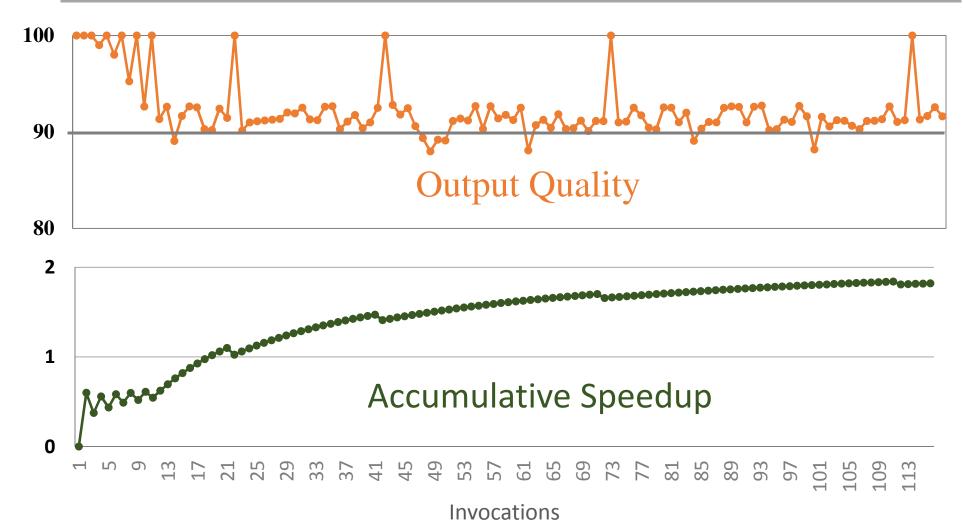




We Can Control Output Quality.



We Can Control Output Quality.



Across 10 applications:

- 2.5x speedup with 90% output quality
- 2.0x speedup with 95% output quality