



# Link time code compaction for the ARM architecture.

27/11/2008

ARM<sup>®</sup>

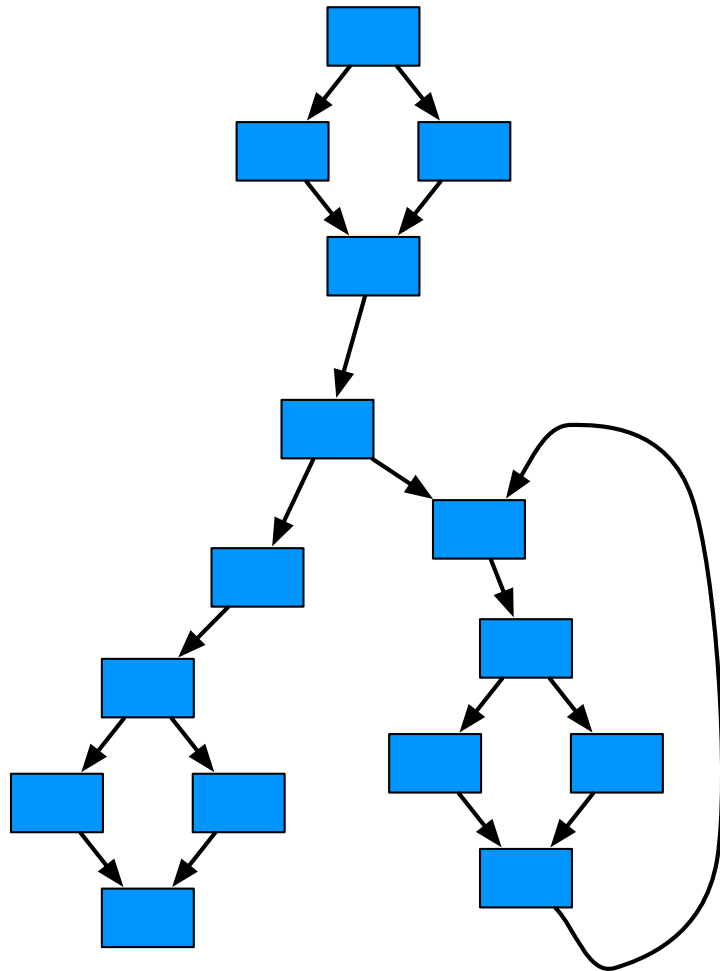


Jonas Maebe

[jonas.maebe@elis.ugent.be](mailto:jonas.maebe@elis.ugent.be)

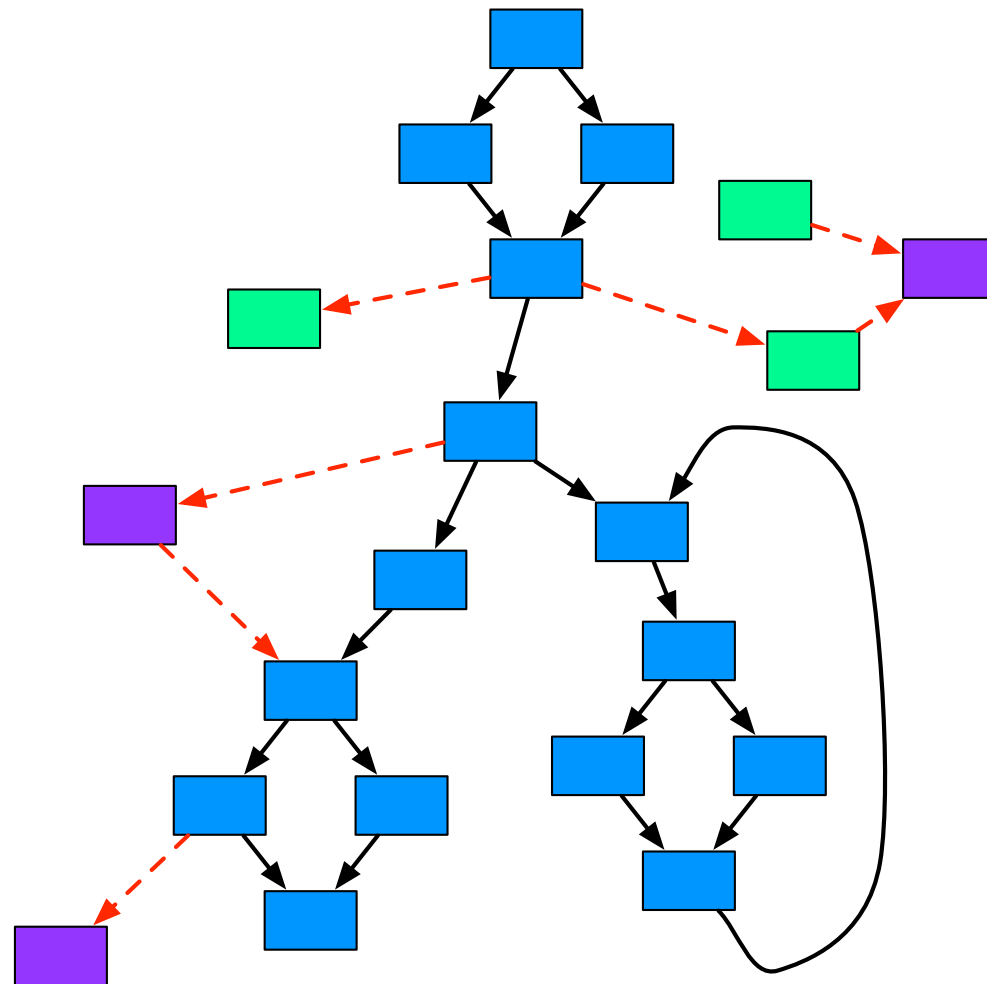


# The Augmented Whole-Program Control Flow Graph (AWPCFG).



control flow graph

# The Augmented Whole-Program Control Flow Graph (AWPCFG).



control flow graph + data



**Goal of the internship**

Some results

Experience

# Goal of the internship

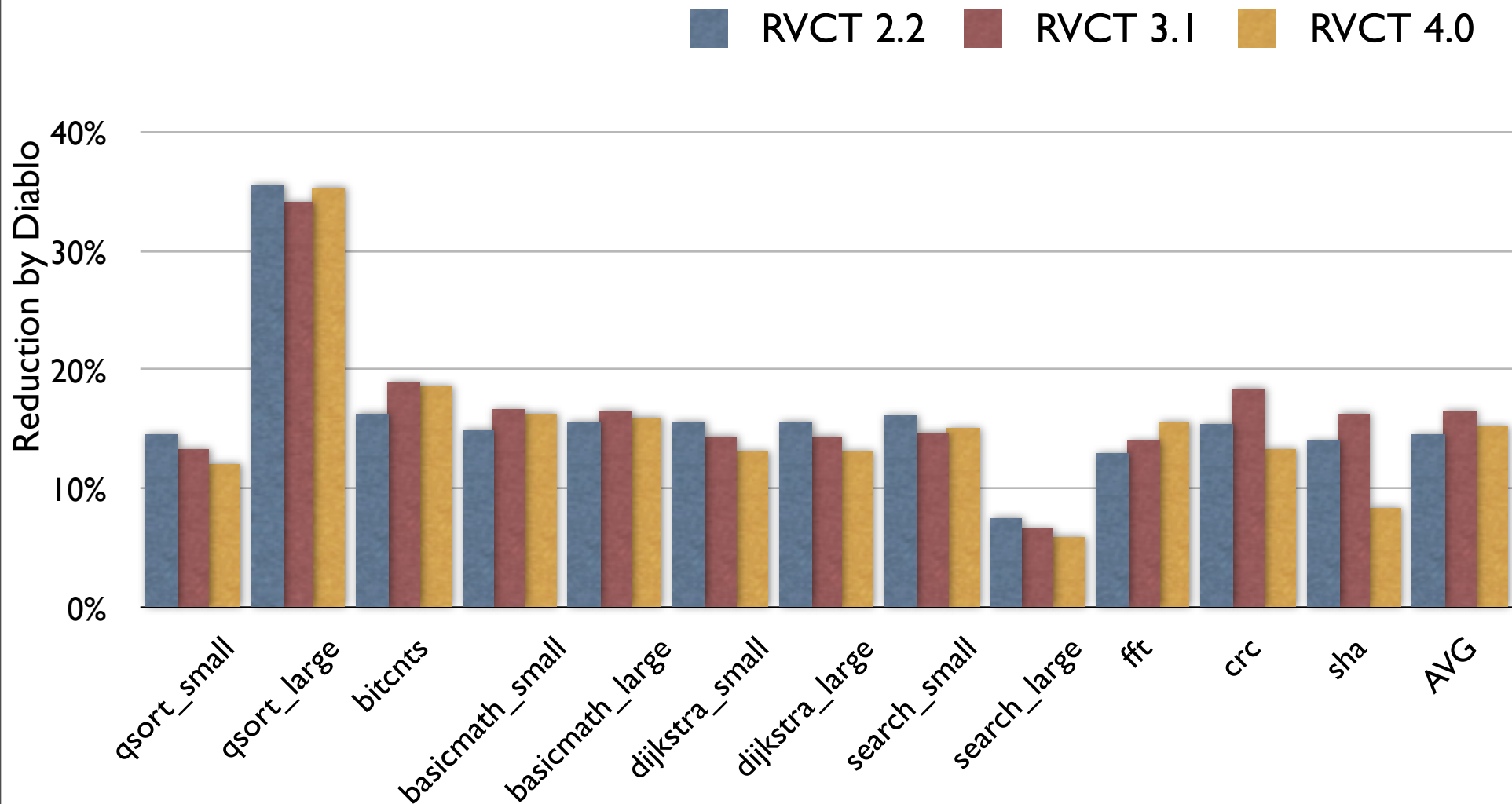
- Evaluate Diablo compaction with
  - new ARM tool chain versions (RVCT)
  - different architecture versions
- Examine sources of compaction gains
- Recommendations for how code could be changed to allow for better compaction

Goal of the internship

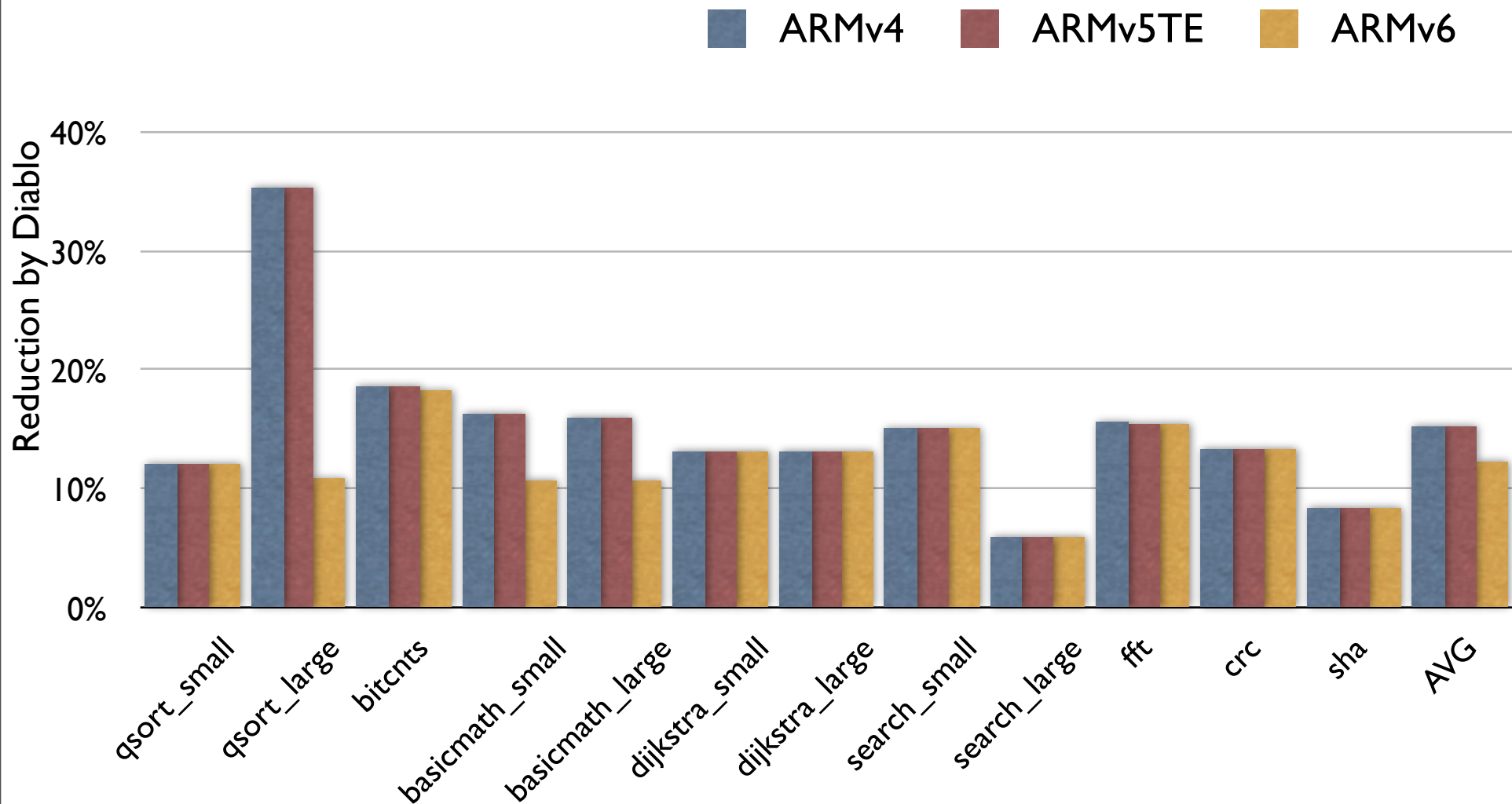
**Some results**

Experience

# Compaction ratio: Different tool chain versions

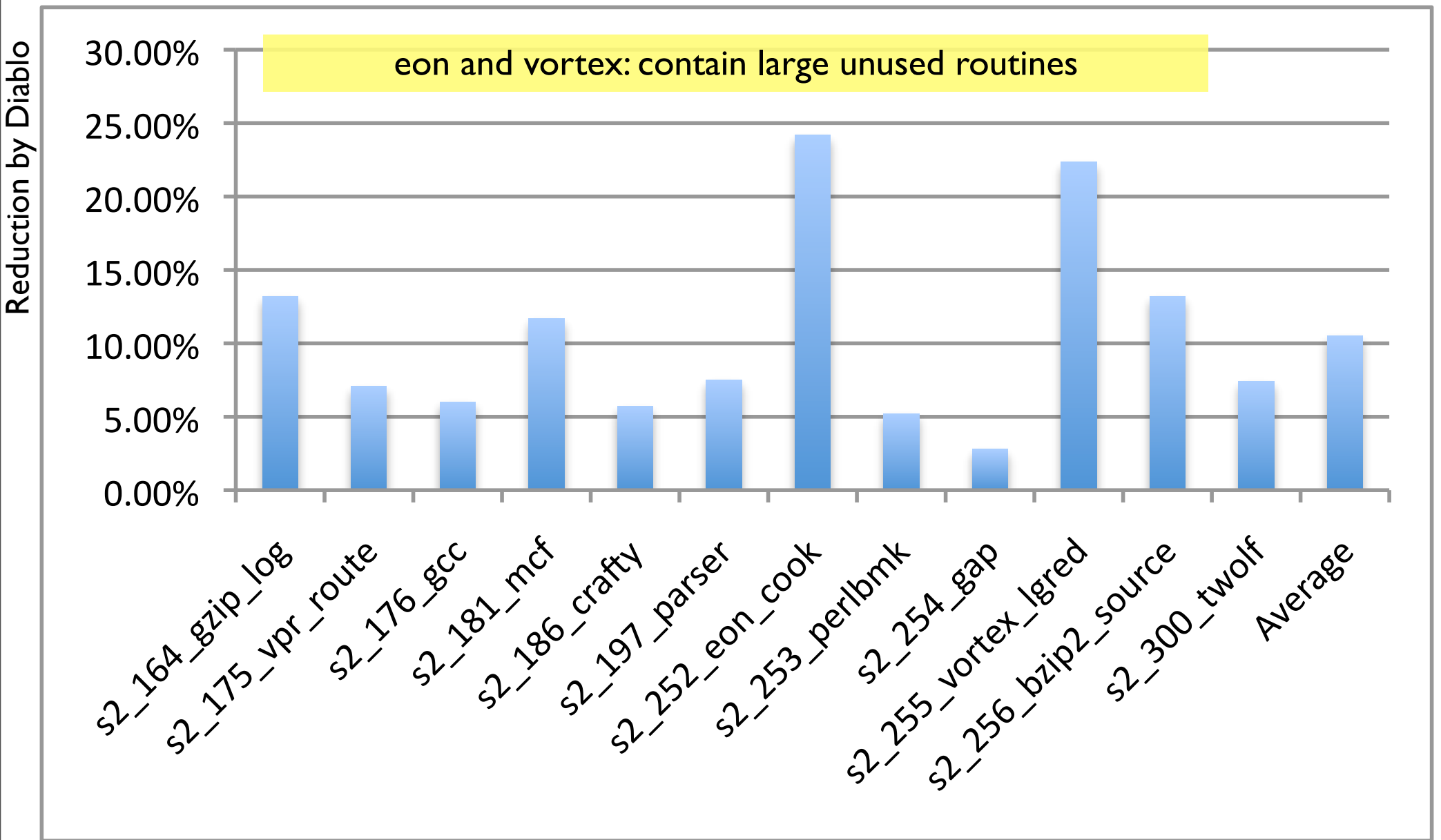


# Compaction ratio: Different target architectures

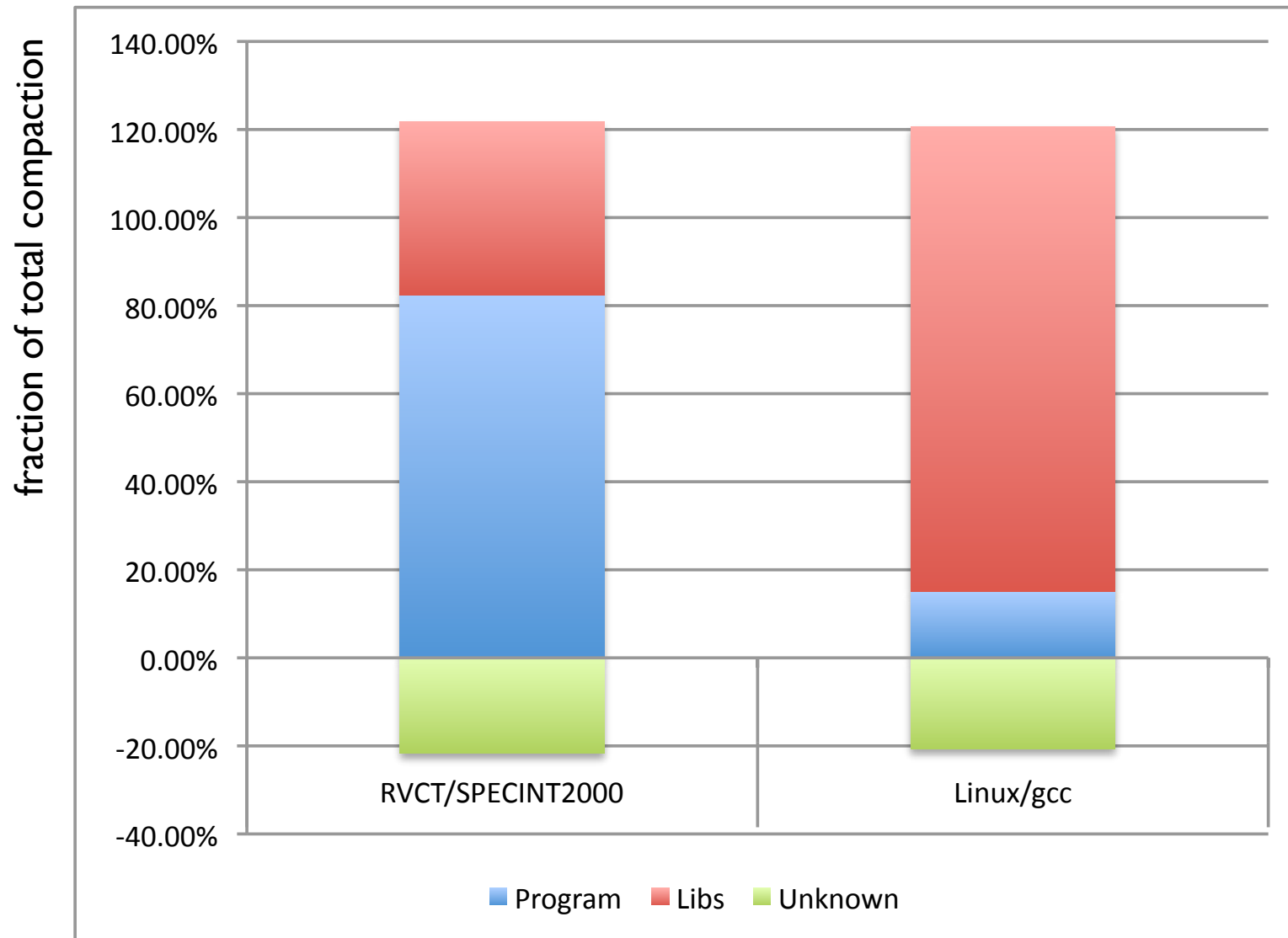


# SPECINT2000 compaction.

*-O3 -Ospace*



# Compaction fraction in program vs. library code



# Experience

- Very welcoming work environment
- Interesting contacts with other interns
- Very interesting to see how a company dev team works (esp. working towards two releases!)
- Managed to come up with interesting results for them as well!