RoWild: A Systematic Study of Robotics on Modern Hardware

- A comprehensive, open-source benchmark suite for real-time robotics.
- RoWild is cross-platform
  - RoWild includes CUDA and Verilog kernels
- RoWild studies architectural implications of robotics on modern hardware.

Tartan: Microarchitecting a Robotics Processor

- A processor designed in response to inefficiencies discovered in modern architectures in the RoWild study
  - Oriented traversals throughout ray-casting and collision detection operations
  - Oriented vectorization
    - vload %addr, %orientation, %size
  - Large graph search & cache thrashing
    - Intra-application cache partitioning

Approximate-acceleration of heuristic function calculations