

16x16 Vector Multiplier Accelerator

- What are you trying to do:
 - Acceleration/low cost implementation of helmet detection to determine traffic violation. Effectively implemented using the yolov5 architecture
- How have other implemented it.
 - Using general purpose CPU, GPUs and NPUs.
- How is my approach different or better
 - Added a 16x16 vector multiplier acceleration.
 - Extended use of RISCV instruction VMMUL (Full definition is not complete in standards committee)
 - Used Qty 64, 2x2 vector multiplier as a processing element with a systolic array implementation. This requires 8 stages or 16 clocks which appear to be a world class implementation
- Things to do in the future
 - Currently use iVarcus and Openlane on a PC. Would like to use server and commercial tools to overcome some of the limitations of the PC tools.