



# Graphics and ML SIG Meeting

Dec 23, 2021

10:05am PDT

<https://github.com/riscv-admin/graphics>



@risc\_v

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# Collaborative & Welcoming Community

RISC-V is a free and open ISA enabling a new era of processor innovation through open standard collaboration. Born in academia and research, RISC-V ISA delivers a new level of free, extensible software and hardware freedom on architecture, paving the way for the next 50 years of computing design and innovation.

**We are a transparent, collaborative community where all are welcomed**, and all members are encouraged to participate. We are a continuous improvement organization. If you see something that can be improved, please tell us. [help@riscv.org](mailto:help@riscv.org)

We as members, contributors, and leaders pledge to make participation in our community a **harassment-free experience for everyone**.

<https://riscv.org/risc-v-international-community-code-of-conduct/>

# Conventions



- Unless it is a scheduled agenda topic, we don't solve problems or detailed topics in most meetings unless specified in the agenda because we don't often have enough time to do so and it is more efficient to do so offline and/or in email. We identify items and send folks off to do the work and come back with solutions or proposals.
- If some policy, org, extension, etc. can be doing things in a better way, help us make it better. Do not change or not abide by the item unilaterally. Instead let's work together to make it better.
- Please conduct meetings that accommodates the virtual and broad geographical nature of our teams. This includes meeting times, repeating questions before you answer, at appropriate times polling attendees, guide people to interact in a way that has attendees taking turns speaking, ...
- Where appropriate and possible, meeting minutes will be added as speaker notes within the slides for the Agenda

# Agenda

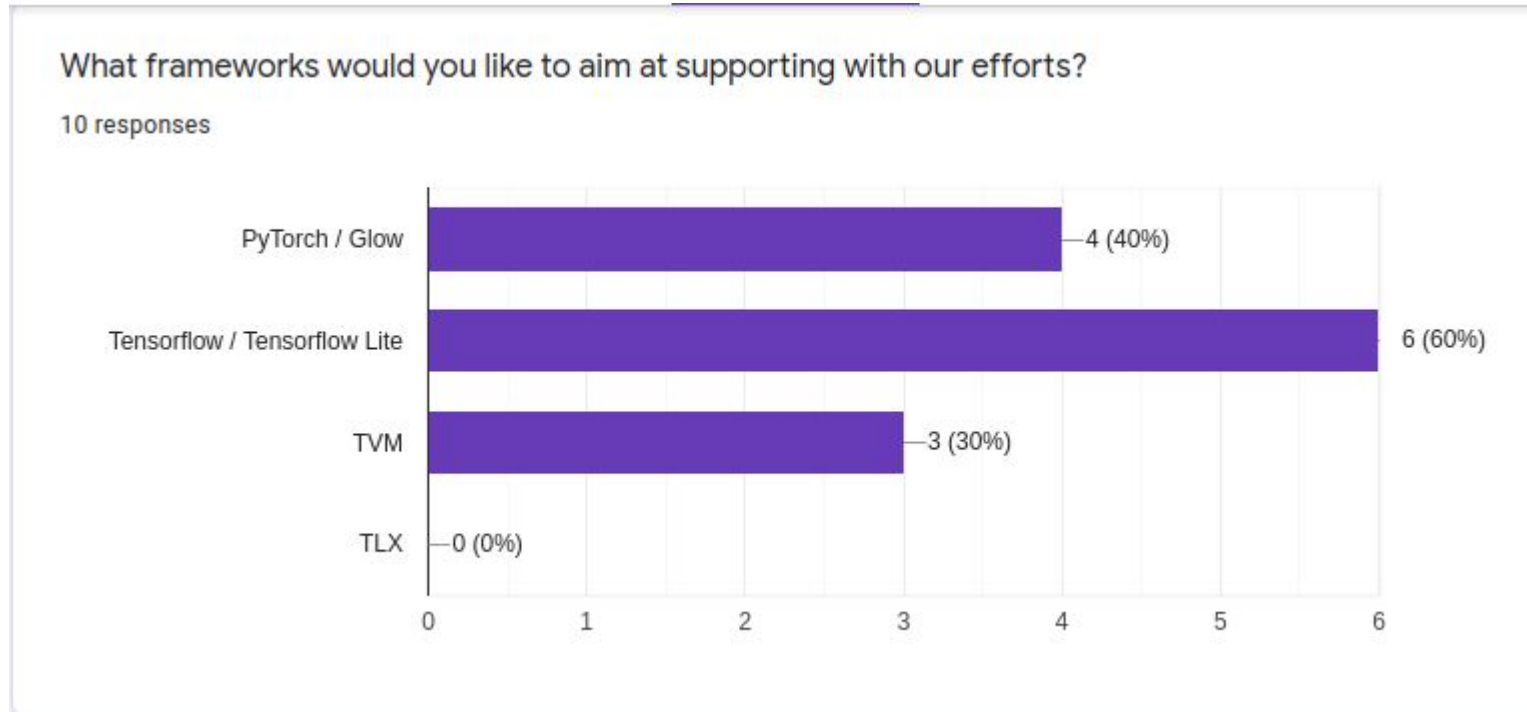


- Introductions (5 min)
- Machine Learning follow up (5 min)
- ML survey results (20 min)
- Gap analysis for ML: a practical approach (20 min)

# Introductions

Round of introductions in alphabetical order.

# Survey results (1/6)

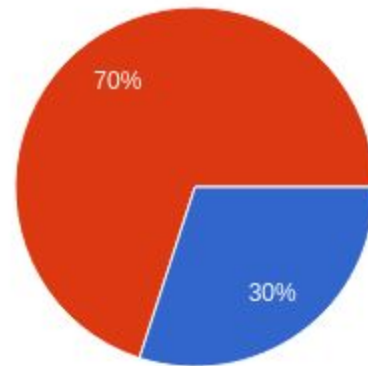




# Survey results (2/6)

Do you prefer a hybrid graphics and ML solution or would you rather build independent specialized solutions for graphics and ML?

10 responses



- A hybrid solution capable of both, graphics and ML
- Solutions as different and specialized as possible for graphics and ML

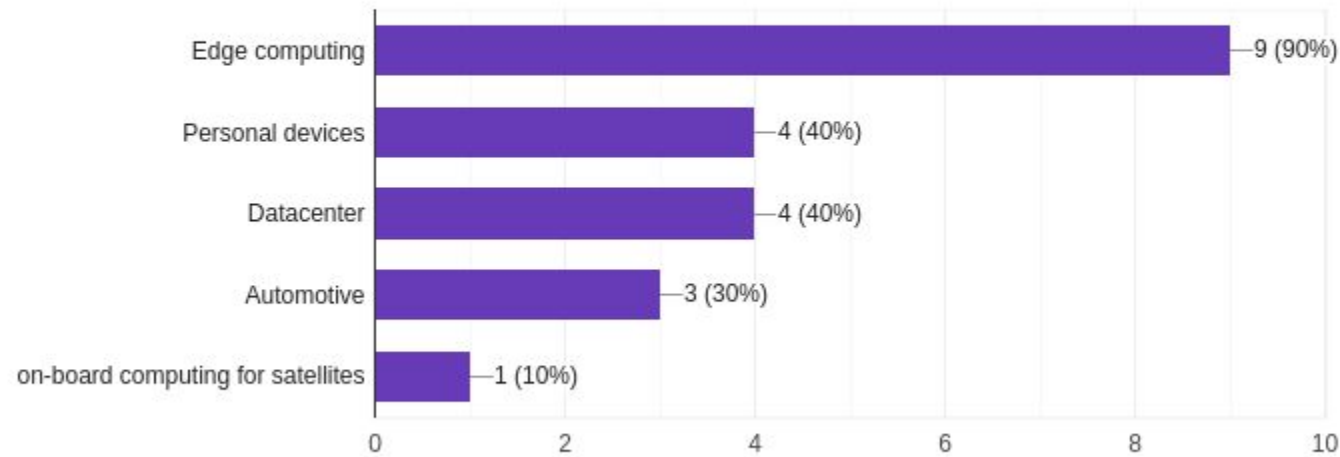


# Survey results (3/6)

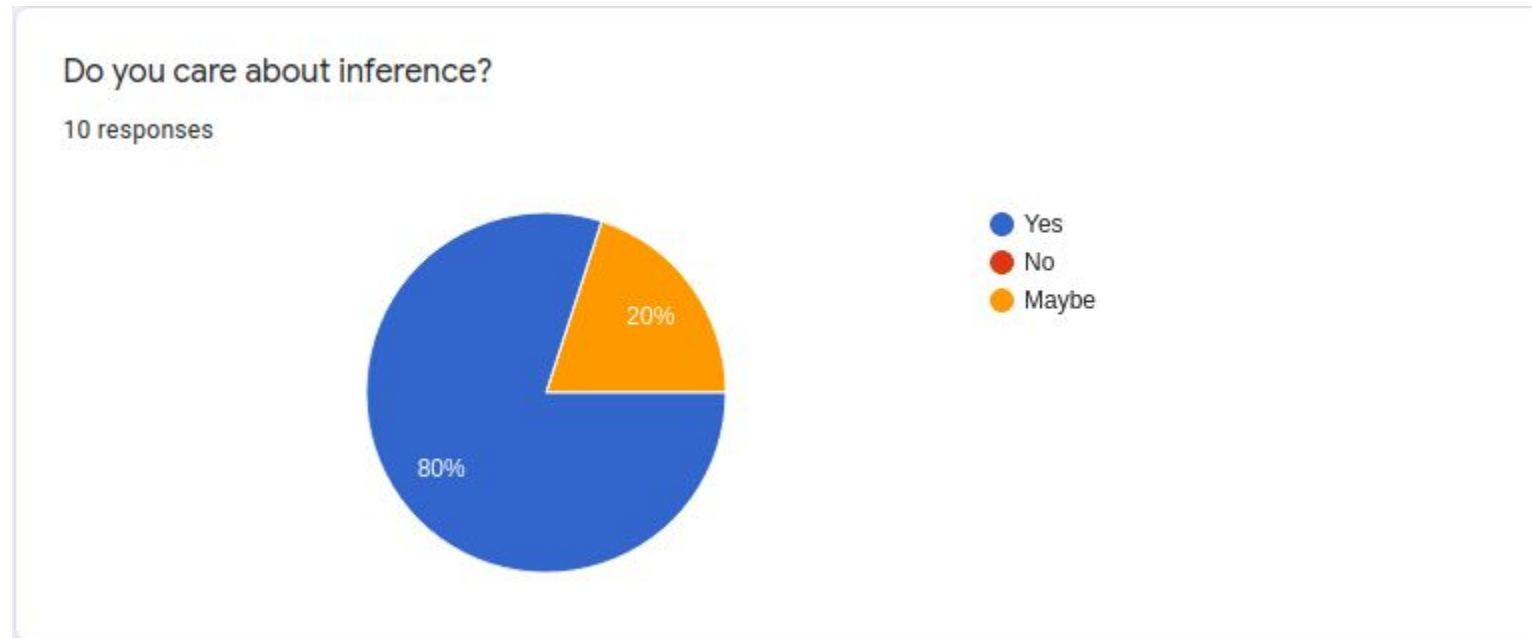
On which niches do you think we should focus? You can pick more than one option.



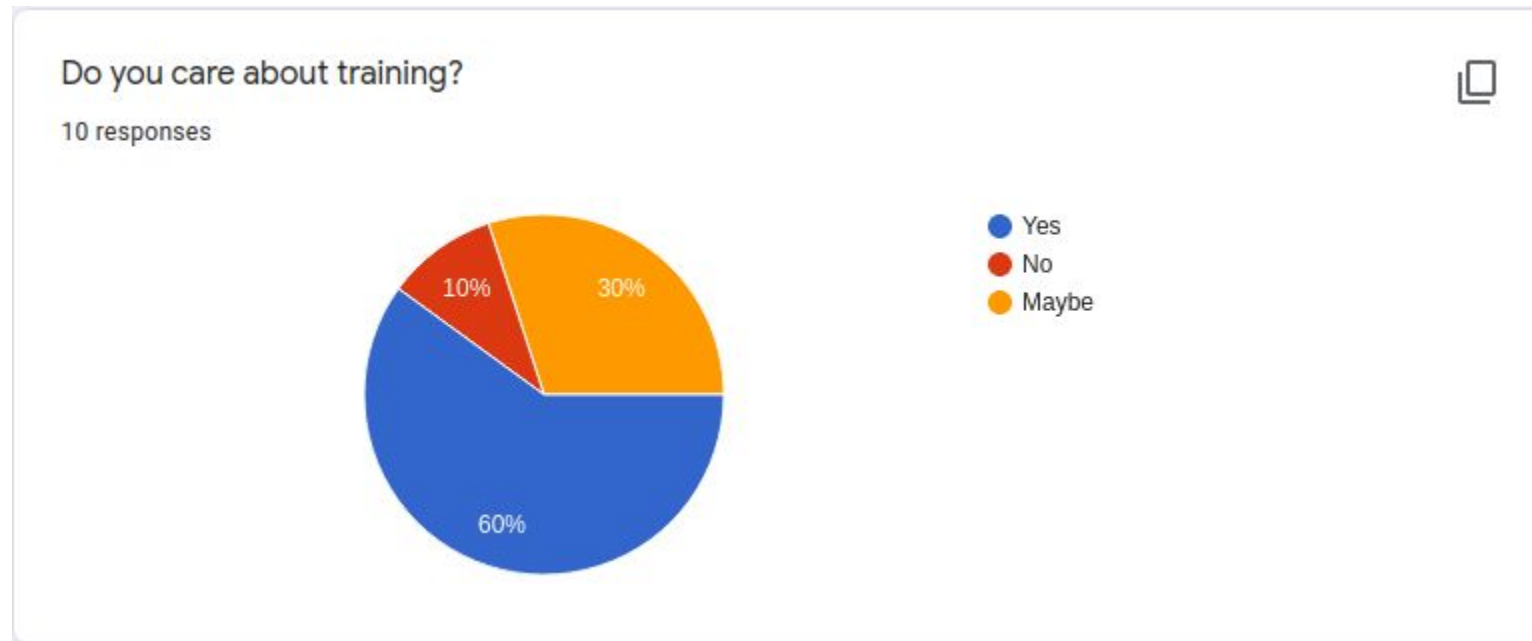
10 responses



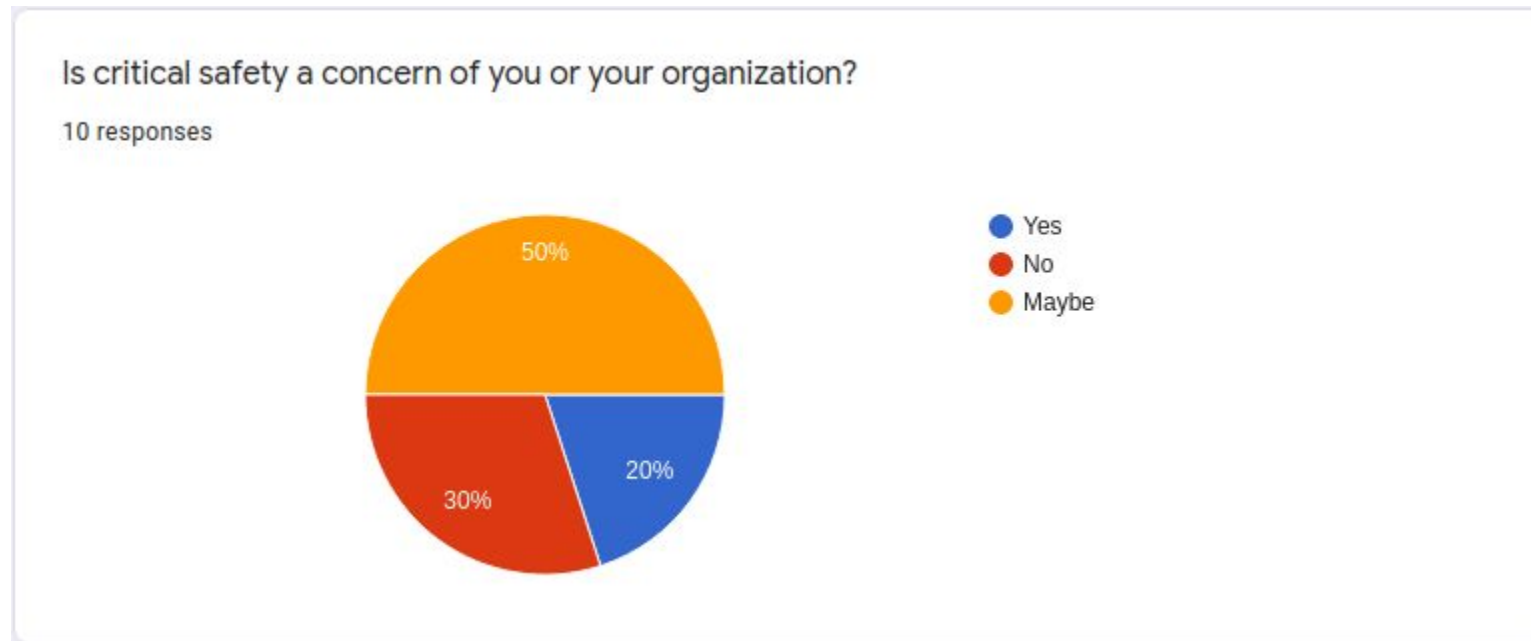
# Survey results (4/6)



# Survey results (5/6)



# Survey results (6/6)



# Gap analysis for ML: a practical approach

Pick a workload we all care about: Resnet50!

Run inference on Spike and identify which nodes take the longest (by instruction count)

Launch one or two workgroups for proposing specific ISA extensions like matrix operations and convolutions.

# Backup Slides