Berkeley Center for Decentraliz

Verizon Event ...

Session III: Foundations of Decentralized AI (II)

zkML: GKR Based Solution for Scalable and Verifiable ML

Tiancheng Xie
CTO
Polyhedra Network

Berkeley

Powered by Zoom

Berkeley Center for Decentraliz

Session III: Foundations of Decentralized AI (II)

zkML: GKR Based Solution for Scalable and Verifiable ML

Tiancheng Xie
CTO
Polyhedra Network

Some insights about ZKML

Tiancheng Xie

Polyhedra Network

Berkeley
UNIVERSITY OF CALIFORNIA

Polyh

Main bottleneck of ML

- Number of H100 people can get
  - Computation intensive

Berkeley
UNIVERSITY OF CALIFORNIA

Polyh

Does this apply to zkML?

- Primer problem:
  - Given three $n \times n$ matrix A, B, C, verify $A \times B = C$

Berkeley
UNIVERSITY OF CALIFORNIA

Polyh

Does this apply to zkML?

- Primer problem:
  - Given three $n \times n$ matrix A, B, C, verify $A \times B = C$
  - Randomly generate a vector r
    - Verify $rA \times B = rC$

Does this apply to zkML?

- Concrete parameters

Summary

Layer	Comp.	Constraint
Conv	~290M	~1.9M (Mul+Add)
ReLU	~270K	~540K Range
Maxpool	~120K	~120K Range
Linear	~517K	~7K (Mul+Add)
Rescale	~270K	~270K Range

Polyh

Thanks Q&A

Berkeley
UNIVERSITY OF CALIFORNIA

Powered by Zoom

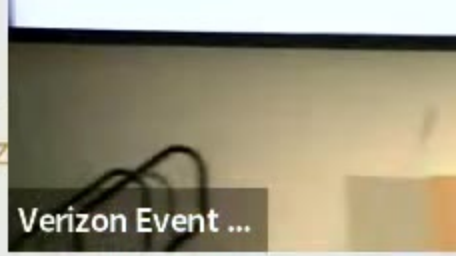
Berkeley Center for Decentraliz

Session IV: Research Spotlight

Berkeley Center for Decentraliz

Session IV: Research Spotlight

Berkeley Center for Decentraliz



Session IV: Research Spotlight

Berkeley Center for Decentraliz

Session IV: Research Spotlight

Berkeley Center for Decentraliz

Session IV: Research Spotlight

Berkeley Center for Decentraliz

Session IV: Research Spotlight