

On the Convergence of Conjugate Gradient Variants in Finite Precision Arithmetic

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This is a companion piece to the publication:

On the Convergence of Conjugate Gradient Variants in Finite Precision Arithmetic. Anne Greenbaum, Hexuan Liu, Tyler Chen. In progress.

A preprint will be on ArXiv in the near future.

Introduction

If you are not familiar with Krylov subspace methods, it may be worth reading this page first.

Conjugate Gradient

Why should I care?

Need new algorithms to deal with modern HPC architecture. But can't sacrifice accuracy.

Take advantage of lower precision for ML type applications.