

# The Conjugate Gradient Algorithm in Finite Precision

Tyler Chen

This page is a work in progress.

## Introduction

In our derivation of the Conjugate Gradient method, we minimized the  $A$ -norm of the error over successive Krylov subspaces. A key component of the subsequence error analysis was that the search directions constructed are  $A$ -orthogonal.

In finite precision, our induction based argument no longer holds.