Analysis of Linear Algebraic Operations of Convolutional Neural Networks

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Abstract

Introduction

This research project aims to explore the linear algebraic foundations of Convolutional Neural Networks (CNNs). CNNs are foundational to modern machine learning applications such as image and video processing, object detection, and medical imagining, to name a few.

Background

Research Questions

This study seeks to answer the following questions:

Methodology and Outcomes

This project will include a unique blend of both theoretical and practical approaches for examining these optimization algorithms.

Timeline

The timeline for this undergraduate research project is expected to go as follows:

1. **September - October:** Gather all sources. Research linear algebraic foundations of CNNs.