

# Bound and Inequalities

**Hadar Tal**

hadar.tal@mail.huji.ac.il

This paper is a summary of the educational materials and lectures from

- **Wikipedia**
- **3Blue1Brown** YouTube channel

Winter 2024



# Contents

<b>1</b>	<b>Bounds</b>	<b>1</b>
<b>2</b>	<b>Inequalities</b>	<b>3</b>



# Chapter 1

## Bounds



## Chapter 2

# Inequalities

### **Theorem 2.0.1. *Cauchy-Schwarz Inequality***

*Let  $u, v$  be vectors of an inner product space. Then*

$$|\langle u, v \rangle|^2 \leq \|u\| \|v\|$$