# Using Algebraic Geometry

With 0 Figures

Anakin Dey

Last Edited on 7/25/24 at 10:34

#### **Contents**

1 Introduction 1

#### **Preface**

At the time of writing this, I am starting my PhD at The Ohio State University. Currently a large part of my interests in algebra are about algorithms as they relate to polynomials and algebraic geometry. I've been doing a bunch of problems from *Ideals, Varieties, and Algorithms* [CLO15]. However, it seems that *Using Algebraic Geometry* [CLO05] moves through the material faster as it assumes you know more algebra. So I've moved onto working through this books as well as trying to comprehend Sturmfel's *Algorithms in Invariant Theory* [Str08].

# Chapter 1

## Introduction

Polynomials and Ideals

### **Bibliography**

- [CLO05] D.A. Cox, J. Little, and D. O'Shea. *Using Algebraic Geometry*. Springer-Verlag, 2005. ISBN: 0387207066. DOI: 10.1007/b138611. URL: http://dx.doi.org/10.1007/b138611.
- [CLO15] D.A. Cox, J. Little, and D. O'Shea. *Ideals, Varieties, and Algorithms: An Introduction to Computational Algebraic Geometry and Commutative Algebra*. Undergraduate Texts in Mathematics. Springer International Publishing, 2015. ISBN: 9783319167213. URL: https://books.google.com/books?id=yL7yCAAAQBAJ.
- [Str08] Bernd Strumfels. *Algorithms in Invariant Theory*. Springer Vienna, 2008. ISBN: 9783211774175. DOI: 10.1007/978-3-211-77417-5. URL: http://dx.doi.org/10.1007/978-3-211-77417-5.