# EECS 395 Project Proposal: Computer Algebra System

David Blincoe Imran Hossain Sam Jenkins Kennan LeJeune
Chris Toomey Ben Young

January 28, 2020

## 1 Background and Project Goals

A computer algebra system (CAS) is a program that symbolically manipulates potentially complex mathematical formulae and outputs a solution. This helps automate equations that may be too difficult for humans to solve in a reasonable amount of time. This differs from a typical calculator in two main ways:

1. It has the ability to solve equations involving symbols in addition to numerics
2. The user can store self-created equations and functions.

Our goal for this project is to develop a computer algebra system and an interface for interacting with it. We hope to implement as many of the following features as possible from scratch, without using external math libraries.

## 2 Features

1. Intuitive user interface for input of equations and output of solutions
2. Simplify expressions
3. Factor polynomials
4. Factor integers into primes
5. Symbolic manipulation of input equations