# CS 6511 Project 2: Graph Coloring Problem

## Introduction

For this project, we are asked to implement a constraint satisfaction problem solver for the Graph Coloring Problem. The code for this assignment is available on GitHub at the following link: <https://github.com/jesserobles/6511_project2>. The code was developed using the algorithms and pseudocode given in the course lecture slides as well as from the material found in (Russell, Norvig, & Chang, 2021). The solver implementation includes a backtracking search algorithm, variable and value ordering heuristics, and two inference methods. These are described in the following, as well as being documented in the code repository.

Search algorithm to solve the CSP

Heuristics

Variable ordering heuristic

min remaining values

Value ordering heuristic

least constraining value)

Inference methods

Forward Checking

Constraint propagation using AC3

# Bibliography

Russell, S. J., Norvig, P., & Chang, M.-W. (2021). *Artificial Intelligence: A Modern Approach.* Hoboken, NJ: Pearson.