



# **Artificial Intelligence Programming**

## ***Genetic Algorithms and Local Search***

Chris Brooks

Department of Computer Science  
University of San Francisco



# Overview

---

- Local Search - When is it useful?
- Hill-climbing search
- Simulated Annealing
- Genetic Algorithms

# Local Search

---

- So far, the algorithms we've looked at store the entire path from initial state to goal state.
- This leads to memory/space issues on large problems.
- For some problems, path information is essential
  - Route finding
  - Water Jugs
  - 8-puzzle
  - The solution *is* the sequence of actions to take.
  - We know what the goal state is, but not how to reach it.