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Introduction to Artificial Intelligence

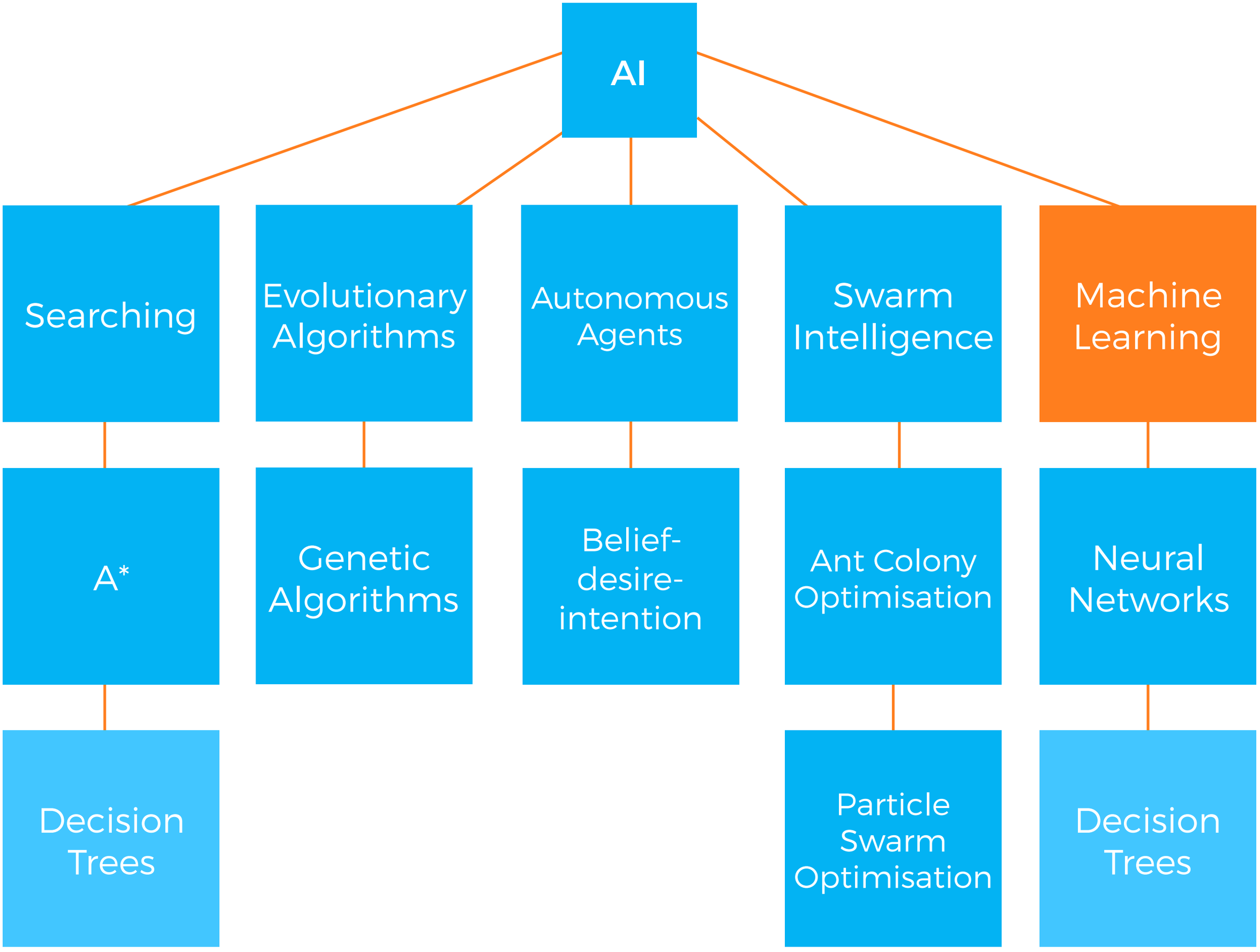
What’s AI?

How to make computers do things which, at the moment, people do better.

Solve problems which cannot be solved or cannot be solved optimally by common computation algorithms.

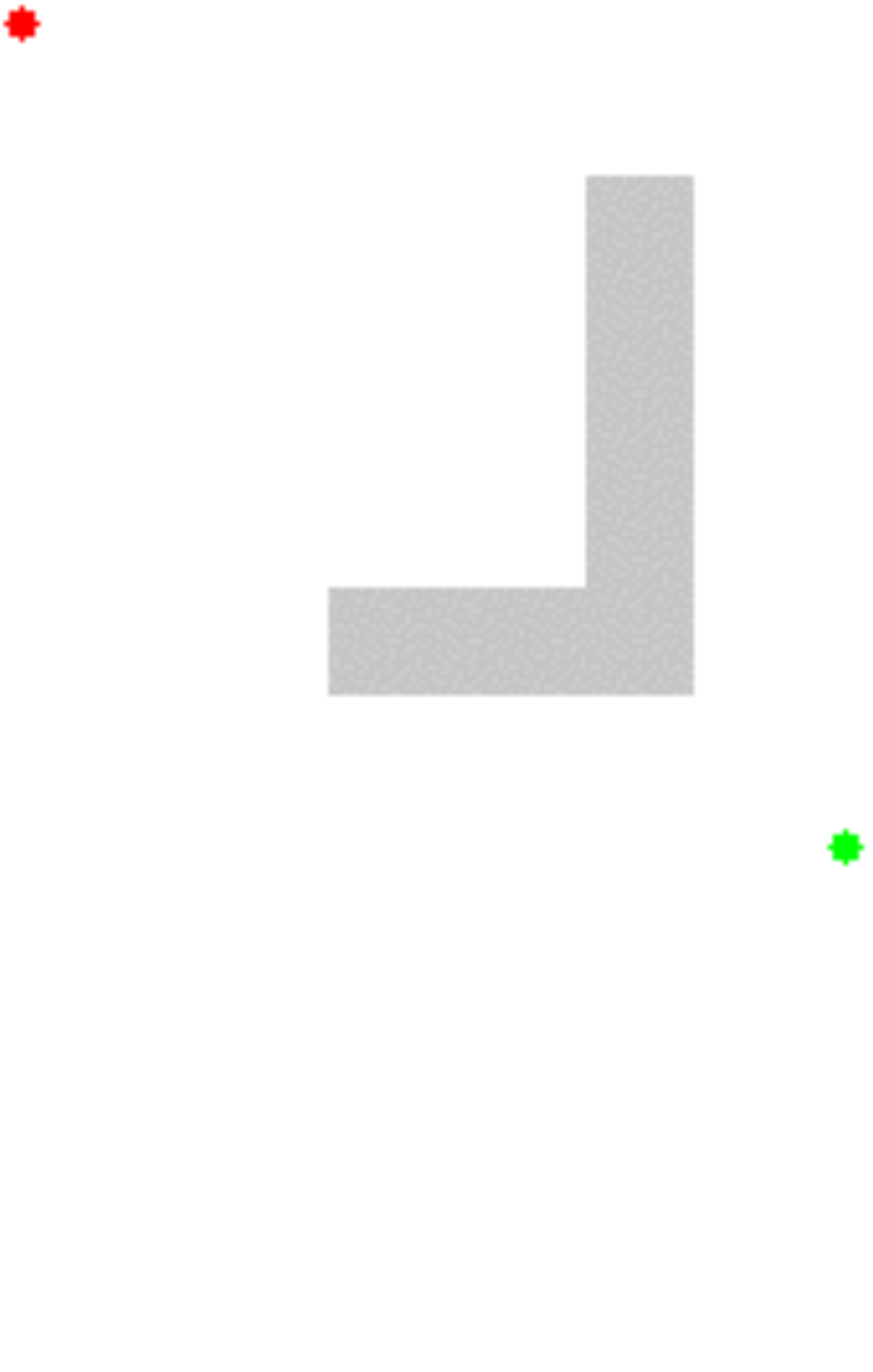
An algorithm that learns, or is trained.

Common AI Algorithms


AI
Searching
Evolutionary Algorithms
Autonomous Agents
Swarm Intelligence
Machine Learning
A*
Genetic Algorithms
Belief-desire-intention
Ant Colony Optimisation
Neural Networks
Decision Trees
Particle Swarm Optimisation
Decision Trees

A* Search

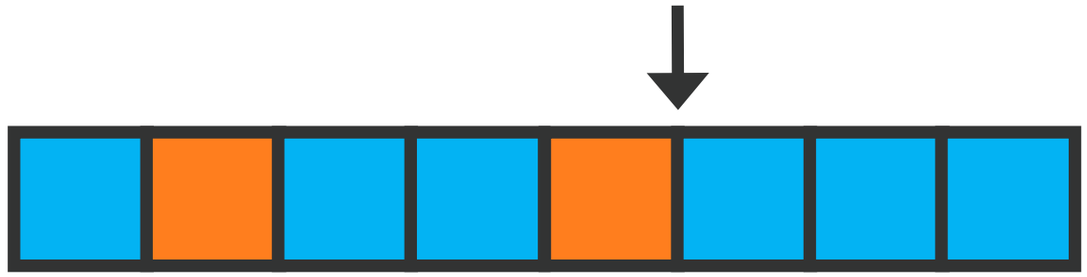
Useful for path finding



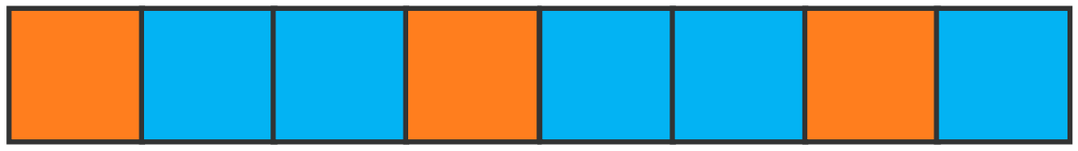
Genetic Algorithm

Useful to determine optimised solutions by evolution

Parent

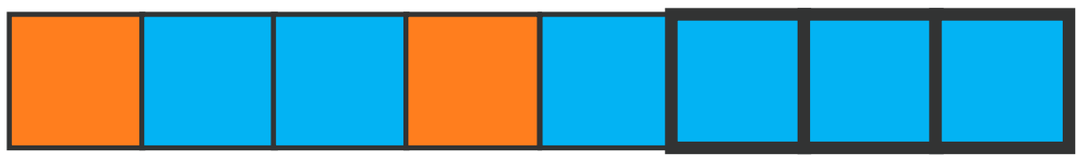


Parent

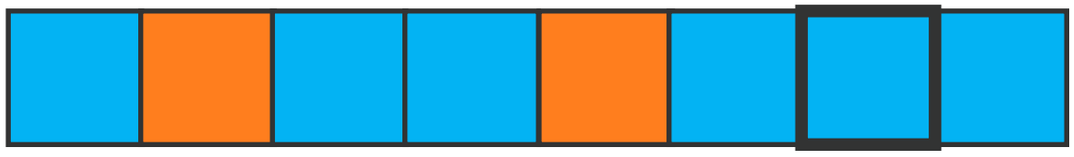


Child A

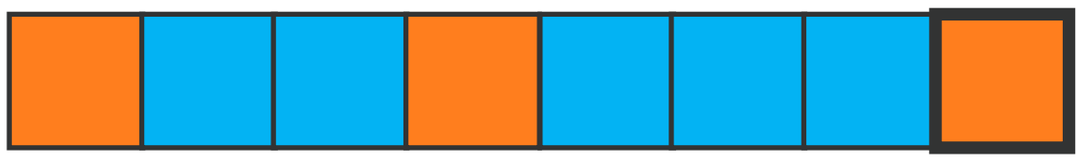
Child B



Mutated Child A



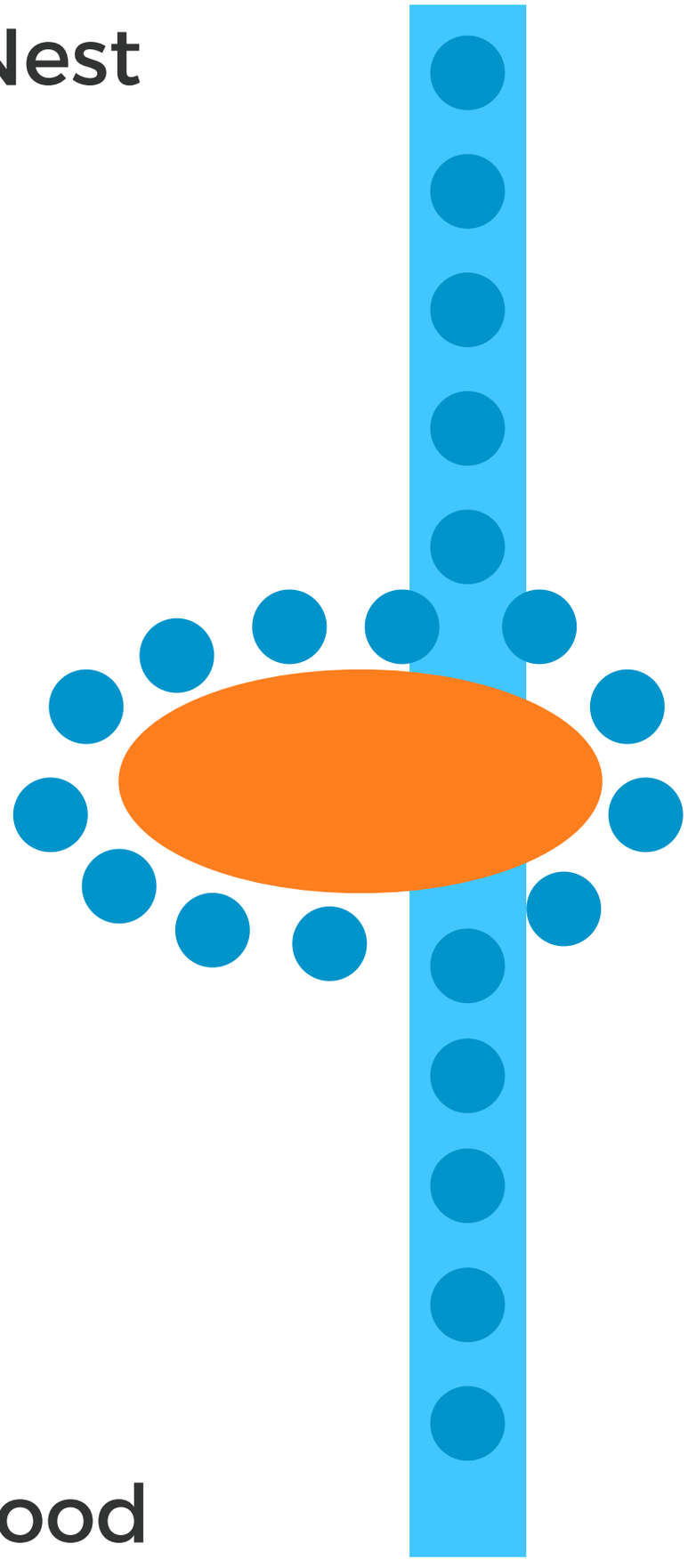
Mutated Child B



Ant Colony Optimisation

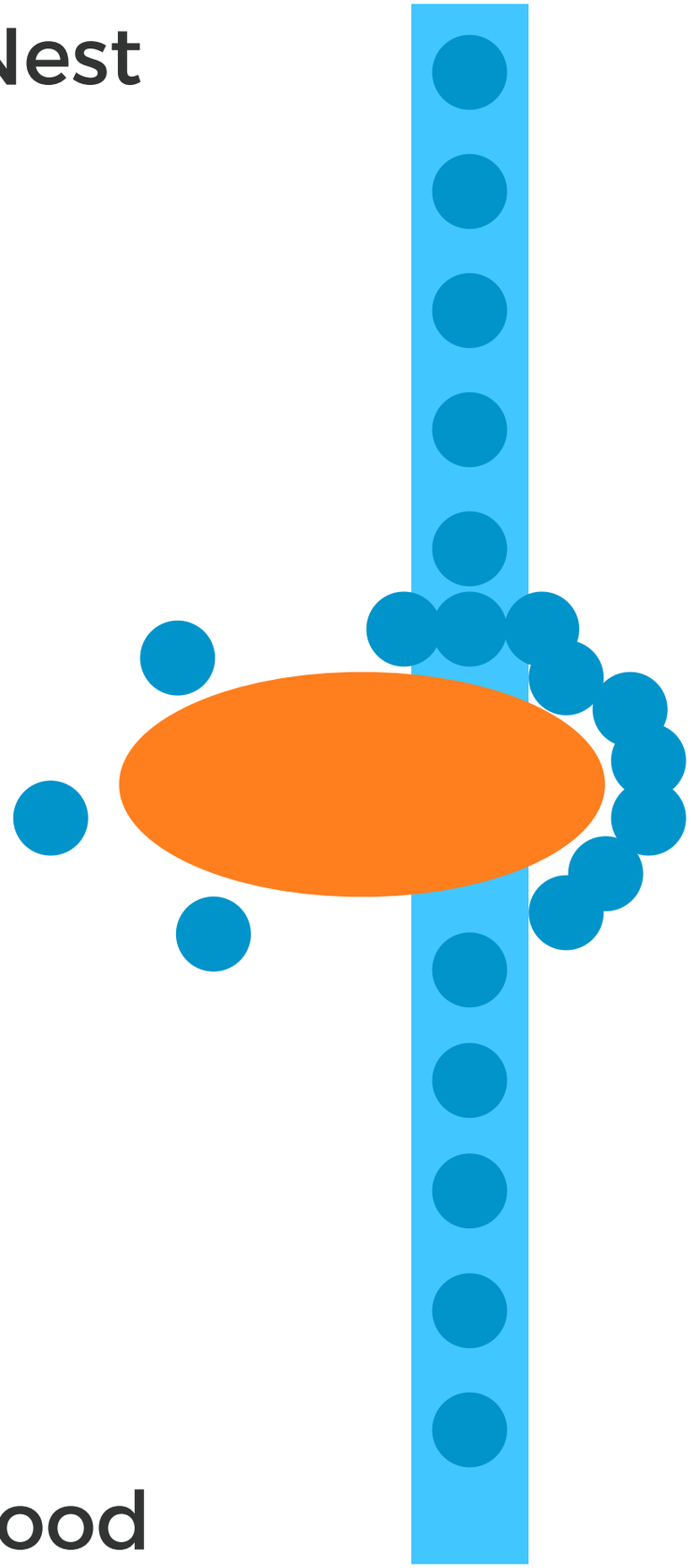
Useful for path finding

Nest



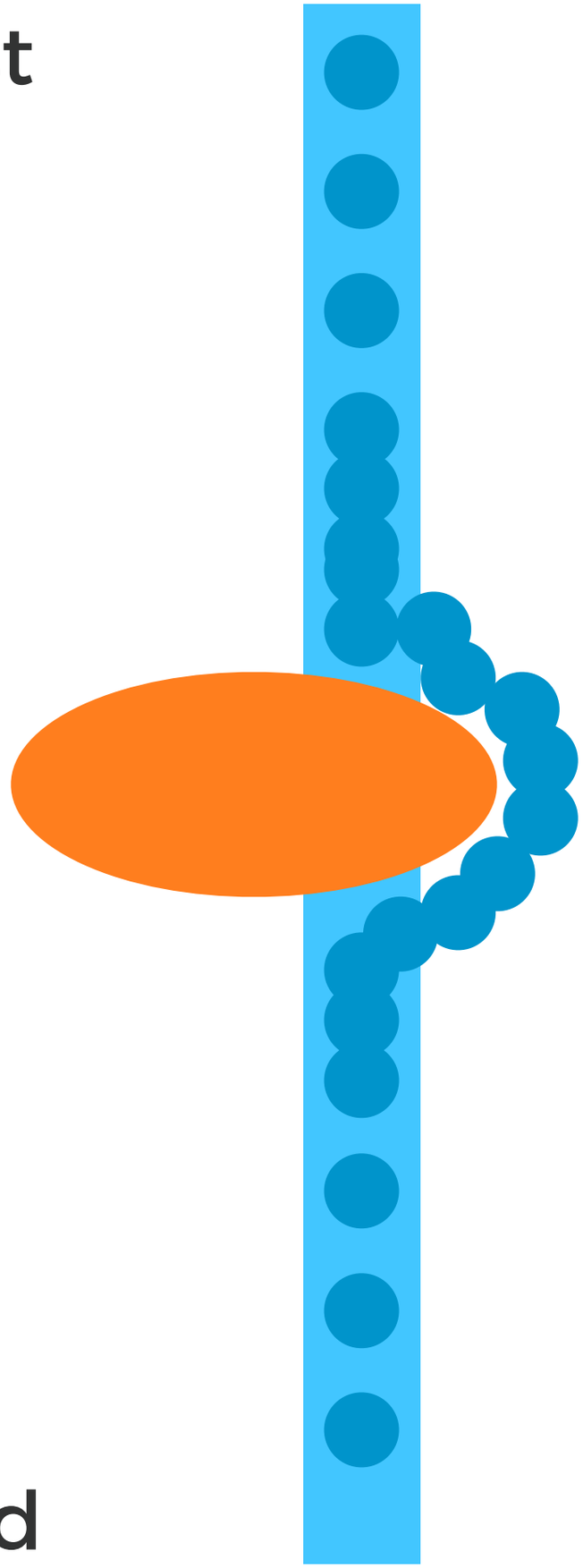
Food

Nest



Food

Nest



Food

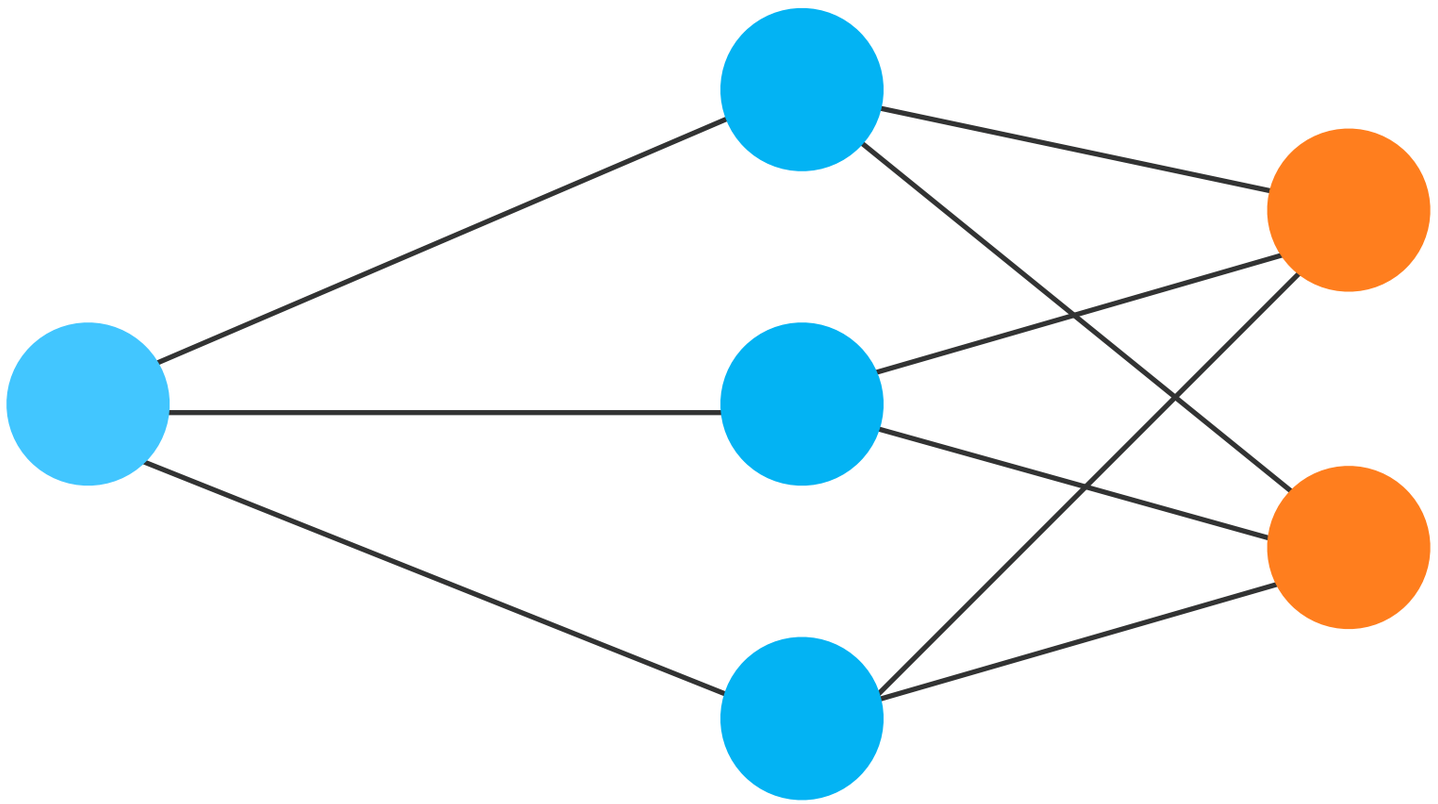
Neural Network

Loosely modelled on the human brain. Useful for classification and optimisation

Input Node

Hidden Nodes

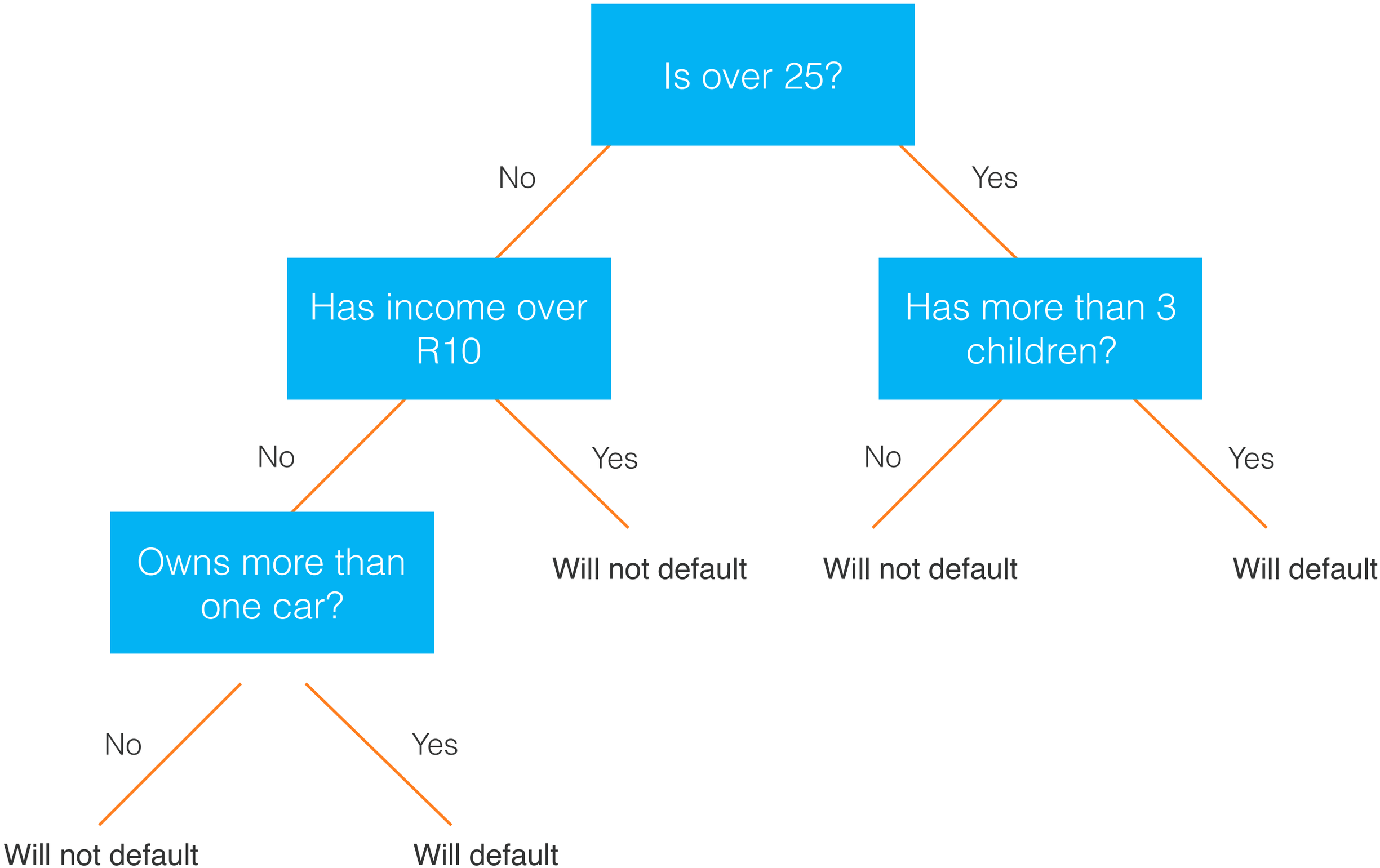
Output Nodes



Decision Tree

Useful when playing turn based games and classification

Will default on loan?



We are on the edge of change comparable to the rise of human life on Earth.

- **Vernor Vinge**

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