In [computer science](https://en.wikipedia.org/wiki/Computer_science) and [operations research](https://en.wikipedia.org/wiki/Operations_research), the **ant colony optimization** [algorithm](https://en.wikipedia.org/wiki/Algorithm) (**ACO**) is a [probabilistic](https://en.wikipedia.org/wiki/Probability) technique for solving computational problems which can be reduced to finding good paths through [graphs](https://en.wikipedia.org/wiki/Graph_(discrete_mathematics)). Artificial ants stand for [multi-agent](https://en.wikipedia.org/wiki/Multi-agent) methods inspired by the behavior of real [ants](https://en.wikipedia.org/wiki/Ant). The pheromone-based communication of biological ants is often the predominant paradigm used.[[2]](https://en.wikipedia.org/wiki/Ant_colony_optimization_algorithms" \l "cite_note-2) Combinations of artificial ants and [local search](https://en.wikipedia.org/wiki/Local_search_(optimization)) algorithms have become a method of choice for numerous optimization tasks involving some sort of [graph](https://en.wikipedia.org/wiki/Graph_(discrete_mathematics)), e.g., [vehicle routing](https://en.wikipedia.org/wiki/Vehicle_routing_problem) and internet [routing](https://en.wikipedia.org/wiki/Routing).

Source: https://en.wikipedia.org/wiki/Ant\_colony\_optimization\_algorithms