

# **The Grafted Genetic Algorithm for Traveling Salesman Problem**

## **1. Introduction**

- 1.1 Dissertation scope and Goals
- 1.2 A note on Methodological Aspects
- 1.3 Structure of the Dissertation

## **2. Background and related work**

- 2.1 Traveling Salesman problem
  - 2.1.1A brief History
  - 2.1.2Problem Formulation
  - 2.1.3TSP Heuristics
- 2.2 Optimization Algorithms
  - 2.2.1 Evolutionary Algorithms
  - 2.2.2 Genetic Algorithms
  - 2.2.3 Hybrid genetic Algorithms
  - 2.2.4 Memetic Algorithms
  - 2.2.5 Lin Kernighan Heuristic

## **3. Grafted genetic Algorithm**

- 3.1 Introduction
    - 3.1.1 The Grafting metaphor
    - 3.1.2 Grafted Genetic Algorithm in Optimization and Search
  - 3.2 GGA Operators
    - 3.2.1 Specialized Cross-over Operators
  - 3.3 GGA for obtaining the Optimal solutions
    - 3.3.1 Introduction
    - 3.3.2 Implementations
  - 3.4 GGA for initial tour on L-K heuristic
    - 3.4.1 Introduction
    - 3.4.2 Implementations
- ## **4. Evaluation (Tables, Graphs, Pictures)**
- ## **5. Conclusion and Future Work**