Route Planning in Wireless Sensor Networks for Data Gathering Purposes
Erratum

Chapter 1

Page 5 Chapter 1.3.2 Line 4:
Reads now: This layer is strongly
Should be: This layer strongly

Chapter 2

Page 8 Chapter 2.1 Line 9:
Reads now: values of set A
Should be: values of set S

Page 8 Chapter 2.1 Line 12:
Reads now: The duality theorem allows to rewrite the function 2.1 as maximization problem. However, since we are tackling a cost minimization problem, the remaining part of this report will only focus on minimization functions.
Should be: Function 2.1 can also be written as a maximization function, since minimize $f(x)$ is equivalent to maximize $[-f(x)]$. However, since we are tackling a cost minimization problem in this thesis, the remaining part of this report will keep the focus on minimization functions.

Page 9 Chapter 2.3 Line 2:
Reads now: NP problems are not solvable in polynomial time $O(n^k)$ where n is the input size of a problem and k is some constant.
Should be: NP-hard problems are not expected to be solver in polynomial time $O(n^k)$ where n is the input size of a problem and k is some constant.

Page 10 Chapter 2.4 Line 22:
Reads now: In the other hand
Should be: On the other hand

Page 11 Chapter 2.4 Line 5:

Reads now: three decision variables, x, v and a
Should be: three decision variables, x, ϑ and a

Page 11 Chapter 2.4 Line 8:
Reads now: node $i, i \in C$
Should be: node $i, i \in N$

Chapter 3

Page 14 Chapter 3 Line 9:
Reads now: routing have not draw
Should be: routing has not drawn

Page 16 Chapter 3.3.2 Line 2:
Reads now: separately solved
Should be: solved separately

Page 18 Chapter 3.4 Line 1:
Reads now: find the optimum solution
Should be: find the optimal solutions

Page 18 Chapter 3.4 Line 6:
Reads now: is optimum or ever if it is near it. The only way
Should be: is optimal or ever if it is near it. One way

Page 19 Chapter 3.4.2 Algorithm 1 Line 3:
Reads now: while *mobile element is not full or there are nodes to visit*
Should be: while *mobile element is not full and there are nodes to visit*

Page 21 Chapter 3.4.3 Algorithm 2 Line 1:
Reads now: Create a direct route for each node
Should be: Create a direct route for each node
Compute all possible cost saving merges for all routes

Page 21 Chapter 3.4.3 Algorithm 2 Line 3:
Reads now: Choose a route
Compute all possible cost saving merges for all routes
Sort all merges by S_{ij}

Should be: Choose a route
Sort all merges by S_{ij} for current route

Page 22 Chapter 3.4.4 Algorithm 3 Line 15:
Reads now: [empty]
Should be: Next node

Page 22 Chapter 3.5 Line 6:
Reads now: local optimums
Should be: local optima

Page 22 Chapter 3.5.1 Line 2:
Reads now: far from optimum
Should be: far from optima

Page 24 Chapter 3.5.2 Line 17:
Reads now: local minimums
Should be: local minima

Page 26 Chapter 3.6.1 Line 2:
Reads now: stronger species
Should be: stronger individuals

Page 26 Chapter 3.6.1 Line 4:
Reads now: produce descendants
Should be: produce offspring

Page 26 Chapter 3.6.1 Algorithm 5 Line 6:
Reads now: Replace initial solution with a new one
Should be: Replace current solution with a new one

Page 26 Chapter 3.6.1 Line 11:
Reads now: tuned it can produce
Should be: tuned they can produce

Page 27 Chapter 3.6.2 Line 5:
Reads now: minimums and to explore

Should be: minima and to explore

Page 29 Chapter 3.6.3 Algorithm 7 Line 1:
Reads now: while *temperature != lower bound* **do**
Should be: Set number of tries
while *temperature != lower bound* **do**

Page 30 Chapter 3.6.5 Line 3:
Reads now: local optimums
Should be: local optima

Page 30 Chapter 3.6.5 Line 18:
Reads now: Higher the value of λ more diverse will be the search, inversely lower the value of λ more directional and guided will be the search.
Should be: The higher the value of λ more diverse will be the search. Inversely, the lower the value of λ more directional and guided will be the search.

Chapter 4

Page 32 Chapter 4.2 Expression 4.1:
Reads now:

$$\sum_{j \in N \setminus \{0\} : a_{jv} \geq a_{iv}} \sum_{h \in N \setminus \{0\}} t_{jh} x_{jhv} \leq DL_i, \qquad \forall i \in C, \forall v \in V$$

Should be:

$$\sum_{j \in N \setminus \{0\} : a_{jv} \geq a_{iv}} \sum_{h \in N \setminus \{0\}} t_{jh} x_{jhv} \leq dl_i, \qquad \forall i \in C, \forall v \in V$$

Page 32 Chapter 4.2 Expression 4.4:
Reads now:

$$k_{iv}^{i} \geq 0, x_{ijv} \in \{0, 1\}, \qquad \forall i, j \in N, \forall v \in V$$

Should be:

$$k_{jv}^{i} \geq 0, x_{ijv} \in \{0, 1\}, \qquad \forall i, j \in N, \forall v \in V$$

Page 32 Chapter 4.2 Table Decision Variables:
Reads now: if vehicle $v \in V$
Should be: if drone $v \in V$ is travelling to node j and

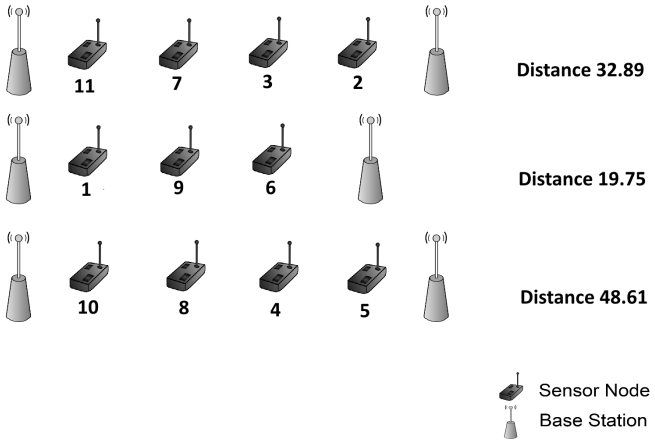
Page 33 Chapter 4.2 Line 2:
Reads now: by dl_{n_i}
Should be: by dl_i

Page 33 Chapter 4.2.1 Line 2:
Reads now: purposed algorithm
Should be: proposed algorithm

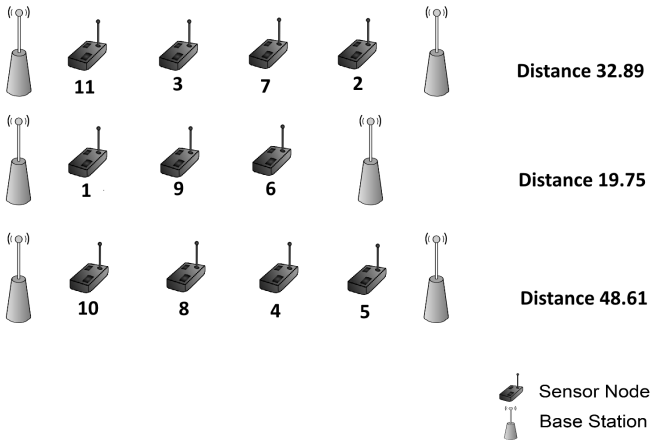
Page 33 Chapter 4.2.1 Line 8:
Reads now: characterized by its
Should be: characterized by their

Page 35 Chapter 4.3.2 Line 1:
Reads now: combined to the
Should be: combined with the

Page 37 Chapter 4.3.4 Figure 4.3:
Reads now:



Should be:



Page 37 Chapter 4.3.4 Line 4:
Reads now: $BS \rightarrow 11 \rightarrow 7 \rightarrow 3 \rightarrow 2 \rightarrow BS$
Should be: $BS \rightarrow 11 \rightarrow 3 \rightarrow 7 \rightarrow 2 \rightarrow BS$

Page 39 Chapter 4.3.6 Algorithm 9 Line 3:
Reads now: Eject nodes from the chosen route
Should be: Eject all nodes from the chosen route