# LIST OF NOTATIONS

| Symbols | Definition |
|---|---|
| $r_{ij}$ | Distance between two fireflies |
| $X_i$ | The vector representing the position of the i-th firefly |
| $X_j$ | The vector representing the position of the j-yh fireflies |
| $\|\|X_i - X_j\|\|$ | The difference between the vector |
| $\sum_{d=1}^{D} \cdot$ | The summation over the index d |
| $x_{id}$ | The dimension coordinate of the vector $X_i$ |
| $x_{ij}$ | The dimensioncoordinate of the vector $X_j$ |
| $(x_{id} - x_{jd})^2$ | The squared difference between the vectors |
| $x_{id}(t+1)$ | The position of i-th firefly and d-th firefly |
| $x_{id}(t)$ | Current position of the i-th firefly |
| $\beta(r_{ij})$ | The attractiveness between the fireflies |
| $x_{jd}(t)$ | The position of j fireflies in the dimension |
| $(x_{jd}(t) - x_{id}(t))$ | The difference in position between the j-th and i-th fireflies |
| $\alpha\varepsilon_i$ | Randomization factor |
| $I_h$ | Entropy of the dataset |
| $\sum_{j=1}^{c} \cdot$ | Summation for each class |
| c | The number of classes |
| $P_j$ | Proportion of instances |
| $log_2 p_j$ | The logarithm of the probability |
| IG(S,A) | Information gain |
| H(S) | Entropy |
| $\sum_{Pg values(A)} \cdot$ | Summation to all possible values of an attribute |
| $\|S_P\|$ | The number of elements in the subset |
| $\|S\|$ | The number of elements in the entire set $S$ |
| $\dfrac{\|S_P}{\|S\|}$ | The proposition of the subset $S_P$ to the entire set $S$ |
| $H(S_P)$ | The entropy of the subset $S_P$ |