EEHRP: Energy Efficient Hybrid Routing Protocol for Wireless Sensor Networks

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Abstract

With Multi-Objective Optimization (MOO) mechanisms, many practical scenarios are imitated in Wireless Sensor Networks (WSNs). In MOO numerous desirable conflicting or non-conflicting objectives contend with one another and the decision has to be done among multiple available solutions. Based on the type of situation, Programme, and issue to be solved, the MOO problem has varied solutions. The solution chosen is a tradeoff solution on several occasions. In WSN, it is possible to identify MOO issues and associated solutions based on network architecture, node deployment, MAC strategies, routing, data aggregation, node mobility, etc. In this context, the paper proposes mobility aware, competent; delay tolerant Energy Efficient Hybrid Routing Protocol (EEHRP). Optimizing several metrics to pick the best route from the source to the target node is the cornerstone of the EEHRP. Multi-Objective optimization from optimization theory is a NP-hard problem. EEHRP seeks to obtain a Pareto optimal solution for the section of best MOO-based route under sensor node. The simulation results

demonstrate that, relative to state-of-the-art solutions, EEHRP is efficient in terms of energy, throughput, delay, control- and routing-overheads. Furthermore, the paper investigates statistical significance of the findings obtained across confidence intervals. To prove EEHRP's competence, a confidential interval of 95% is inserted into the simulation results obtained to represent margin of error around the estimated points. The on-hand state-of-art solutions and the propensity of the research fraternity in relation to MOO are also analyzed in this paper.

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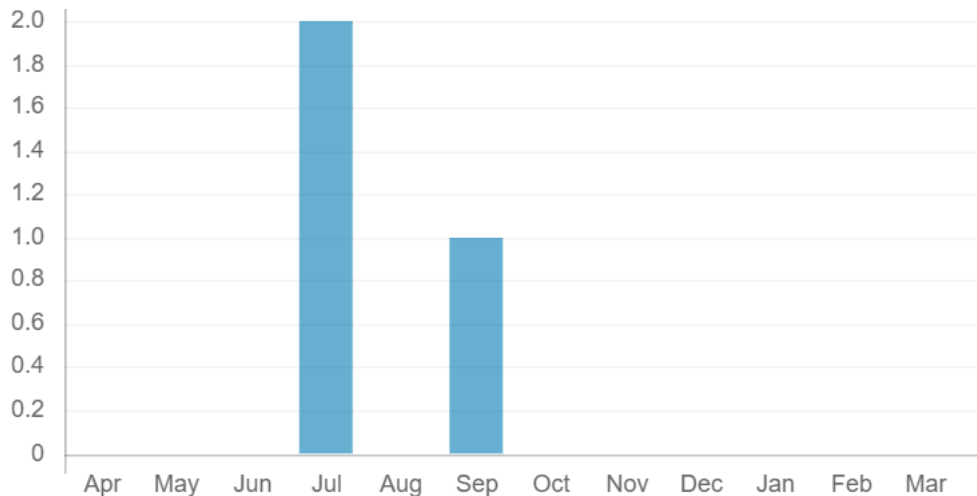
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