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Towards energy efficient service composition in green energy powered
Cyber-Physical Fog Systems

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- To our best knowledge, we are the first to propose green energy powered CPFS architecture. Our architecture explores the green energy harvesting capability of fog nodes to reduce carbon footprint and allows flexible service composition using existing data processing services.
- Taking the green energy harvesting diversity into consideration, we study a energy-efficient sensing application deployment problem with guaranteed QoS. We formulate the problem in the form of mixed-integer linear programming (MILP), with joint consideration of source rate control, load balancing and service replica placement.
- To deal with the high computational complexity of solving MILP, we further propose a low-complexity heuristic algorithm and validate its high efficiency through extensive experiments.

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