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(54) Title of the invention : QUANTUM INSPIRED COMMUNITY DETECTION FOR PREDICTING COVID-19 HOTSPOTS LINKED WITH LABOUR MIGRATION IN INDIA

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(57) Abstract :

A quantum inspired community detection method with geographical sensitivity is disclosed for prediction of COVID-19 hotspots linked with labour migration in India; with empirical evaluation based on different metrics like- degree centrality, edge-betweenness centrality and modularity; wherein the system comprises of a data collection module (102) designed to procure the data related to the number of COVID-19 patients, a module (104) that accesses the data related to the eleven states harboring prominent labour migration; module (110) representing the formulation of both GS covid migrant dataset and Non-GS covid migrant dataset obtained via modules (102, 104, 106 and 108); module (112) and (114) wherein Precision and Recall based analysis of the hotspots predicted by degree and edge-betweenness centrality is validated by real-time data and module (116), wherein modularity based comparative analysis of GS-QIEC and QIEC variants with standard community detection approaches cements the superiority of proposed system; apart from demonstrating improved performance for GS covid migrant dataset.

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