Title.
On graph similarity analysis

Context and motivation.
There are numerous applications that utilize graphs, including logistics networks, communication networks, social interactions, molecular structures, and knowledge representations.
In this internship, we assume an Oracle database exists, which is capable of delivering some graph structures with respect to given application requirements. Then, the challenge of interest, here, is to characterize the similarity of given graph structures generated by the considered Oracle w.r.t. specific application constraints.

Goal of the project.
We would like to address the aforementioned challenge by studying measurement or analysis techniques known in graph or network theory [1] [2], and possibly propose an alternative approach.

The successful applicant to this project should ideally have some basic notions of either network or graph theory.

Keywords.
Graphs and network theory, centrality measures

Contact information.
Applications are to be sent to Abdoulaye Gamatié (Abdoulaye.Gamatie@lirmm.fr), who is a member of the LIRMM laboratory.
LIRMM is a cross-faculty research entity of the University of Montpellier and the National Center for Scientific Research (CNRS). Located in Montpellier, LIRMM is one of the largest multi-disciplinary research laboratories in Europe. Its Microelectronics department carries out cutting-edge research in the fields of design and testing integrated systems and micro-systems, with a focus on architectural aspects, modeling and methodology.

References.
[1] Phillip Bonacich, “Power and Centrality: A Family of Measures”, *American Journal of Sociology*, University of Chicago Press, vol. 92, 1987, p. 1170–1182 (DOI 10.1086/228631).

[2] Stephen P. Borgatti, “Centrality and Network Flow”, *Social Networks*, Elsevier, vol. 27, 2005, p. 55–71 (DOI 10.1016/j.socnet.2004.11.008).