Asynchronous distributed computation of network centrality measures

Resume:
We shall study asynchronously distributed methods (see e.g., [1,2,3]) for network centrality computation. The asynchronous distributed methods are very useful because they allow efficient and flexible use of computational resources on one hand (e.g., using cluster or cloud) and on the other hand they allow quick local update of centrality measures without the need to recompute it from scratch. As a case study, we start with PageRank [6] and then extend the methods to other centrality measures, in particular, to the centrality measure similar to betweenness centrality [4,5]. At the moment, there is no efficient asynchronous distributed algorithms for centrality computation. Most existing approaches are not asynchronous.

Related references:
Main activities
The main activity is writing journal and conference papers with possibility of patenting algorithms.

Skills
Requirements:
- PhD in Mathematics, Computer Science, Electrical Engineering or Physics;
- Solid background in Linear Algebra, Probability and Statistics is expected;
- Experience in machine learning is a plus;
- Knowledge of python is another plus.

Benefits package
- Subsidised catering service
- Partially-reimbursed public transport
- Social security
- Paid leave
- Flexible working hours
- Sports facilities

Remuneration
Gross Salary: 2650 brutto per month