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I would like to investigate Distributed Motif Detection. Parallelized programs often rely on simply modifying the sequential algorithm and hope that the communication overhead does not outweigh the benefit of parallelization (W. Kim). Many distributed systems rely on Map reduce and a parallel file system however this technique can only go so far in leveraging the benefits in distributed computing(W. Kim). I would like to provide a brief description of current parallel implementations and potential Distributed algorithms while analyzing different factors that must be taken to account when implementing a distributed algorithm(scaling, heterogeneous systems, handling failure/disconnect from workers).

W. Kim, M. Diko and K. Rawson, "Network motif detection: Algorithms, parallel and cloud computing, and related tools," in *Tsinghua Science and Technology*, vol. 18, no. 5, pp. 469-489, Oct. 2013. doi: 10.1109/TST.2013.6616521. <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6616521&isnumber=6616513>