

## Postdoc position algorithmic graph theory and phylogenetics

This postdoc position, for a minimum of 2 years, seeks to explore the interface between algorithmic graph theory and phylogenetics. Phylogenetics is the science of inferring evolutionary trees and networks; a phylogenetic tree (network) is simply a tree (directed acyclic graph) in which the leaves are labelled by a set of species  $X$ .

The postdoc will be based at the Department of Data Science and Knowledge Engineering (DKE) at Maastricht University in the Netherlands, where the research will be embedded within the Networks and Strategic Optimization (NSO) research cluster of DKE. The main coordinator of the project is Dr. Steven Kelk. The project is made possible by an NWO TOP grant.

A completed PhD in a relevant field is required. Relevant keywords are phylogenetics, fixed parameter tractability, width parameters (particularly treewidth), (algorithmic) graph theory, combinatorial optimization and computational complexity. Candidates with expertise in any or all of these topics are encouraged to apply.

Experience with or knowledge of biology is not necessary. A willingness to work on the kind of NP-hard discrete optimization problems that arise in the area of phylogenetics is, however, essential.

One example of such a problem is that of constructing a Maximum Agreement Forest (MAF) of two phylogenetic trees. Informally, this is the problem of making as few edge deletions as possible in the two trees, such that the resulting subtrees are (essentially) isomorphic (see also Fundamentals of Parameterized Complexity by Downey and Fellows 2013, Chapter 4).

MAF and related problems are gaining an increasing amount of attention from the traditional algorithms community. The goal of this project is to consolidate and deepen the embedding of phylogenetics problems in the algorithmic literature, and a corresponding level of ambition is expected of the candidate.

Candidates should have an excellent command of English, both in terms of speaking and writing.

Please include a letter of motivation, a CV and two references, and indicate how soon you could begin (sooner is preferred). The application itself should be submitted through the following Academic Transfer page, which also includes salary information:

<https://www.academictransfer.com/employer/UM/vacancy/31782/lang/en/>

The deadline for applications is 23 February 2016.

For more information please contact Dr. Steven Kelk ([steven.kelk@maastrichtuniversity.nl](mailto:steven.kelk@maastrichtuniversity.nl)) or +31 (0)43 3882019). See also the webpage <http://skelk.sdf-eu.org>.