Who is Who in Phylogenetic Networks

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I. Introduction

A phylogenetic network is a graphical model of evolutionary history of a species, cell, gene etcetera. Unlike the classical tree-based mode, a network is able to account for events such as recombination, hybridization and horizontal gene transfer.

The website, "Who is Who in Phylogenetic Networks", at `http://phylnet.univ-mlv.fr/` is a database of publications on phylogenetic methods broadly related to computer science integrated with basic web-based tools to analyze and visualize the information in the database. The database forms the most important part of the entire application, and contains authorship, collaboration and geographical data tagged with keywords, along with entries of software related to phylogenetic networks. The dynamic visualization tools further enrich this information with common graph and social network metrics such as centrality (betweenness, eigenvector, degree and closeness) and clustering. The front-end exposes ways to download raw information about the entries in the database, suggest modifications and contribute new information to the database.

II. Database statistics and back-end

Presently, the database contains 521 authors, 548 articles and 212 keywords. Additionally, there exist 3221 keyword-article associations. For interfacing with the database, BiBAdmin (OSI Approved, GNU General Public License) PHP scripts are used. More information about BibAdmin is available at `https://gforge.inria.fr/projects/bibadmin/`. All information is stored in a single SQL database in separate tables for authors, keywords, publications and the relationships between the entries of these tables. BibAdmin uses the PHP mysql extension to interface with the database.

III. Brief description of front-end and sources

The front-end of the website is written in PHP, HTML, CSS and Javascript. Substantial changes have been made to many BibAdmin scripts and additional scripts added in the present version of the website.

The "Pure CSS" collection has been used for styling the website, and most pages use snippets of CSS and HTML from the "Pricing Table" and "Responsive Side Menu" layouts on `http://purecss.io/layouts/`. Pure CSS is licensed under Yahoo! Inc. BSD license.The popover info-boxes present on the web pages with dynamic graphs are coded using snippets of CSS and JavaScript from a tutorial at `http://www.thewebdevelopmentblog.com/`. In addition, the website makes use of subsidiary CSS code accompanying JavaScript libraries such as "vis.js" and "ion-range-slider". Many BiBAdmin scripts use inline styling and most of this has been removed and corresponding Pure CSS modules used. Custom, hard-coded colors and font sizes are use to create "word-clouds" throughout the website. The vector icons used throughout the website, and especially in the menus and the "browse pub-

lications" pages have been implemented using the Font Awesome toolkit available at http://fortawesome.github.io/Font-Awesome/. According to its website, "Font Awesome is fully open source and is GPL friendly".

The website makes extensive use of many JavaScript libraries. For creating the interactive, static co-authorship network on the authors.php page, and the bar graphs on the publications.php page, "vis.js" has been used, with some code drawn from the examples at http://visjs.org/examples/network/data/importingFromGephi.html and http://visjs.org/examples/graph2d/11_barsSideBySideGroups.html. Vis.js is dual licensed under Apache 2.0 and MIT. The JSON files incorporating the co-authorship network and social network metrics used in the static network on the authors.php page have been exported using Gephi (see http://gephi.github.io). For implementing the "year sliders", the "ion.rangeSlider" library at https://github.com/IonDen/ion.rangeSlider has been utilized. Ion.RangeSlider is distributed under the terms of MIT license. For creating, manipulating and processing the dynamic on the authors.php and keywords.php pages, the JSNetworkX library has been used, with some code drawn from examples at http://felix-kling.de/JSNetworkX/examples.html. JSNetworkX is distributed with the BSD license. For implementing the sliding graphs and text-clouds on the keywords.php and publications.php pages, the slick library available at http://kenwheeler.github.io/slick/ has been employed. Slick is licensed under the MIT license. For styling and behavior of dropdown select boxes throughout the website, the select2 library (https://select2.github.io) is used. Select2 is licensed under the MIT license. The above libraries depend on the jQuery (https://jquery.com) library and the D3 (http://d3js.org) library. JQuery is licensed under the MIT license. D3 is licensed under the BSD license.