

CAB newsletter 20 December 2022

You are receiving this as a member of the Centre for Applied Bioinformatics (CAB)

Not yet joined CAB? Well if you are receiving this you already have joined, but if you know anyone who would like to join, then please forward this message and they can now sign up using a simple web form from the members page at <https://www.appliedbioinformatics.com.au/Members.php>

Focus on the European Bioinformatics Institute (EBI):

EMBL-EBI is an international leader in training and support in applied bioinformatics. This month CAB Director Dave Edwards met online with Ajay Mishra, Scientific Training Officer at EMBL-EBI to learn more about what they do and what bioinformatics resources and training opportunities that they provide.

EMBL-EBI hosts an extensive set of open and free access resources, databases and associated training for bioinformatics: <https://www.ebi.ac.uk/>

These include tools for data analysis as well as the latest version of major databases: <https://www.ebi.ac.uk/services>

EMBL-EBI organises live webinars throughout the year. Please have a look at their upcoming webinars here - <https://www.ebi.ac.uk/training/webinars> Unfortunately for us, they are not always convenient to attend live for the time zone, however all of these webinars are recorded and available online - <http://bit.ly/ebi-webinar-recordings>

A special webinar, designed mainly for teachers and trainers, has been scheduled to run on 18th January 2023. You may register for it here - An introduction to EBI for teachers and trainers: <https://www.ebi.ac.uk/training/events/introduction-embl-ebi-teachers-and-trainers/>

An excellent introduction to bioinformatics called 'Bioinformatics for the terrified' is highly recommended for those new to or interested in learning bioinformatics, it is available here: <https://www.ebi.ac.uk/training/online/courses/bioinformatics-terrified/>

Explore the library of online tutorials useful for bioinformatics here - <https://bit.ly/EBI-online-tutorials>

To see updates from their communications or sign up to the EBI newsletter, please enter your details at the bottom of this page: <https://www.embl.org/news/>

News:

SBS HDR students are seeking a volunteer to provide a short workshop on Python/R between the 8th and 10th of February 2023. Please contact michael.taylor@research.uwa.edu.au for details.

Twitter addicts, get your fix of the latest bioinformatics tweets at @UWABioinfo
Promote your publications through CAB tweets! Please email any of your recent publications and we can promote through the CAB newsletter and twitter account [@UWABioinfo](#)

Missed a previous newsletter? Fear not, they are now all available online at: <https://www.appliedbioinformatics.com.au/Newsletters.php>

Interesting papers:

Title: An interaction regression model for crop yield prediction

Summary: Neat machine learning model using combinatorial optimisation to identify and quantify the most important features and their interactions for crop yield prediction. To ensure robustness in model explainability, they only maintain features/interactions considered relevant across multiple years and regions in the dataset. Code is available on a GitHub repository linked in the paper, although it doesn't have much documentation attached.

Link: <https://doi.org/10.1038/s41598-021-97221-7>

Title: A data-driven simulation platform to predict cultivars' performances under uncertain weather conditions

Summary: Uses monte carlo to build simulations and predict crop performance under uncertain weather conditions. They use a bunch of wheat ($n = 25,841$) to learn G×E patterns and make the predictions.

Link: <https://www.nature.com/articles/s41467-020-18480-y>

Title: Crop disease identification and interpretation method based on multimodal deep learning

Summary: Built a knowledge graph for disease identification by coupling images of diseased tomato and cucumber leaves with the pathogen description from multiple sources. The resulting deep learning model considers the image and text for pathogen identification, which helps provide context for more accurate predictions. The methods could be applied to tons of other things.

Link: <https://doi.org/10.1016/j.compag.2021.106408>

Please send information on interesting papers that I can promote in the newsletter/CAB twitter feed.

Conferences and Presentations:

ARDC Digital Research Skills Summit

When: 9 to 10 February 2023

Where: Sydney/Gadigal Country

Infrastructure:

How to apply for Nimbus servers:

Would you like some free Linux servers with up to 16 cores and 64 GB RAM through Pawsey? Dr Sarah Beecroft has helpfully provided a 'how to apply' video available at <https://www.youtube.com/watch?v=mpFQC5sXSHQ> Users have full access to these machines and we have prepared an image that supports many standard bioinformatics tasks that can run on this scale of machine.

The **Pawsey merit allocation review** process has now been completed and results have been published on Pawsey website: <https://pawsey.org.au/2023-allocations/>

Training:

Bioconductor-organized Carpentries instructor training application.

Become a certified Carpentries instructor and contribute to the global Bioconductor teaching community. Improve your skills, get community support and uplift your peers through great training! See: https://docs.google.com/forms/d/e/1FAIpQLSen6S6Zd0_gdvfXpSgZ-QSnIhTSkFF4VXBfQI1bt9nVsYr8gQ/viewform

And finally:

Don't forget to have a wonderful Christmas and New Year break!

Professor Dave Edwards
Director UWA Centre for Applied Bioinformatics
School of Biological Sciences
University of Western Australia
Perth, 6009
Australia

www.appliedbioinformatics.com.au

Dave.Edwards@uwa.edu.au

Mobile: [+61 \(0\)423 826 042](tel:+618423826042)