Monday

8h45-9h Welcome, introduction

9h-10h Keynote

*Harnessing AI in phylogenomics*
*Tal Pupko*

10h-11h Phylogenetics (1/2)

*Phyloformer: Towards fast and accurate phylogeny reconstruction with self-attention networks*
*Luca Nesterenko, Luc Blassel, Bastien Boussau, Laurent Jacob*

*Learning from an Artificial Neural Network in Phylogenetics*
*Alina Leuchtenberger*

11h-11h30 coffee break

11h30-13h Simulating realistic data

*Assessing usefulness of artificial genomes via local ancestry inference*
*Maïwen Demeulle, Titouan Chambe, Antoine Szatkownik, Léon Planche, Burak Yelmen, Flora Jay*

*Simulations of Sequence Evolution: How (Un)realistic They Are and Why*
*Johanna Trost, Julia Haag, Dimitri Höhler, Laurent Jacob, Alexandros Stamatakis, Bastien Boussau*

*Fitting Indel Evolution Model Parameters to PFam Protein Alignments with a GPU-accelerated Framework*
*Annabel Large, Ian Holmes*

13h-14h30 lunch break

14h30-15h30 Keynote

*Deep learning for the phylogenetic inference of species diversification*
*Hélène Morlon*

15h30-16h30 Phylogenetics (2/2)

*Neural networks can predict ghost species diversity from gene transfers*
Enzo Marsot, Théo Tricou, Laurent Jacob, Bastien Boussau, Damien De Vienne

Predicting Phylogenetic Bootstrap Values via Machine Learning
Julius Wiegert, Julia Haag, Dimitri Hoehler, Alexandros Stamatakis

16h30-17h coffee break

17h-19h poster session [posters could hang for the rest of the conference?]

Tuesday

9h-10h Keynote

Generative adversarial networks, transfer learning, and interpretability for evolutionary inference
Sara Mathieson

10h-11h Predictions on a single sequence (1/2) : Protein Language Models

Illuminating the functional landscape of the dark proteome across the Animal Tree of Life through natural language processing models
Gemma I. Martínez-Redondo, Israel Barrios, Marçal Vázquez-Valls, Ana M. Rojas, Rosa Fernández

Deciphering Deep Phylogeny and Evolution of Protein Families through Protein Language Models
Ivan Koludarov

11h-11h30 break

11h30-13h30 Predictions on a single sequence (2/2)

Classification of the evolutionary origin of orphan genes using machine learning approaches
Nikolaos Vakirlis, Anne Kupczok, Jori De Leuw, Leonardos Mageiros, Christoforos Nikolaou

Unsupervised learning as a tool to retrieve genomes from undersampled taxa: Fast and slow evolution in myxozoans
Claudia Weber

Long context windows improve deep learning methods for predicting genomic regulation
Ian Holmes

Interpreting artificial neural networks for detecting genome-wide association signals for complex traits
Burak Yelmen, Maris Alver, Silva Kasela, Lili Milani

13h30-14h30 lunch break

Afternoon: time for exchange/networking, optional short hike (bus + hike at Sroumpoulas
https://blog.fodelebeach.gr/uncategorized/mount-stroumboulas/

Wednesday

9h-10h Keynote

*Inference of Coalescence Times and Variant Ages Using Convolutional Neural Networks*
Pier Palamara

10h-11h Population genetics (1/2)

*Using supervised machine learning methods to infer demographic history from genomic data*
Arnaud Quelin, Flora Jay, Frédéric Austerlitz

*Unifying Ideas from the Sequentially Markovian Coalescence with Deep Learning for Population Genomic Inference*
Kevin Korfmann, Aurélien Tellier

11h-11h30 break

11h30-13h Detecting positive selection

*Scalable CNN-based classification of selective sweeps using derived allele frequencies*
Sjoerd Van den Belt, Nikolaos Alachiotis

*Detecting selective sweeps using FPGA-accelerated spiking convolutional neural networks*
Hanging Zhao, Federico Corradi, Zhanbo Shen, Nikolaos Alachiotis

*Detecting Positive Selection using Convolutional Neural Networks*
Charlotte West, Conor Walker, Nicola DeMaio, Nick Goldman

13h-14h30 lunch break

14h30-16h Phylodynamics

*Improving tree representation and neural network architecture for deep learning from phylogenies in phylodynamics and diversification studies*
Manolo Perez, Olivier Gascuel
Transformers for EpiDemiological DYnamics: from genomic data to epidemiological parameters
Vincent Garot, Luca Nesterenko, Luc Blassel, Anna Zhukova, Samuel Alizon, Laurent Jacob

Assessing the power of artificial intelligence approaches for birth-death model classification
Pablo Gutiérrez de la Peña, Guillermo Iglesias Hernández, Andrea Sánchez Meseguer, Isabel Sanmartín

16h-16h15 closing comments

16h15-18h poster session