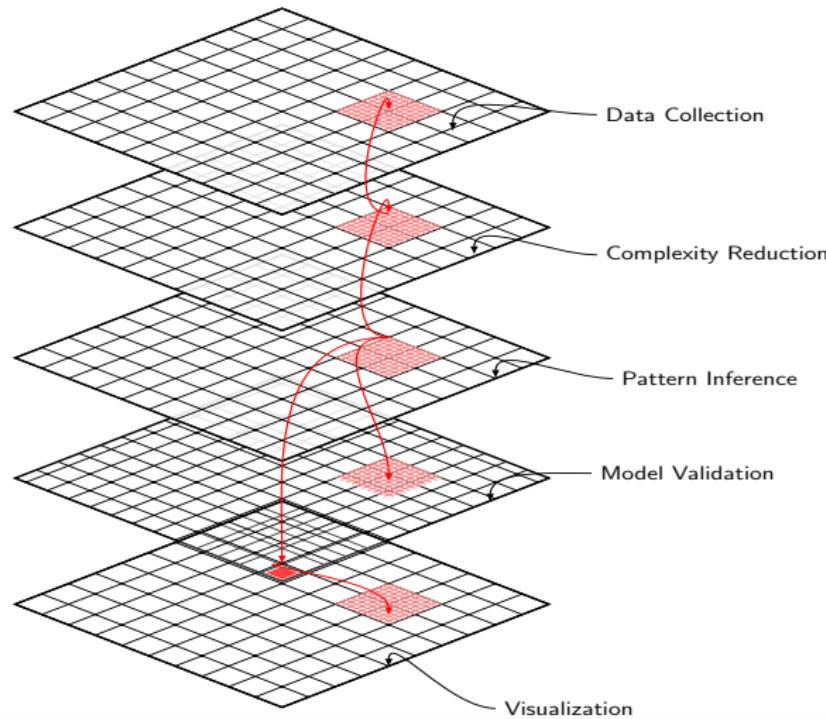


Towards Deep Process-based Learning Networks in Biodiversity Research

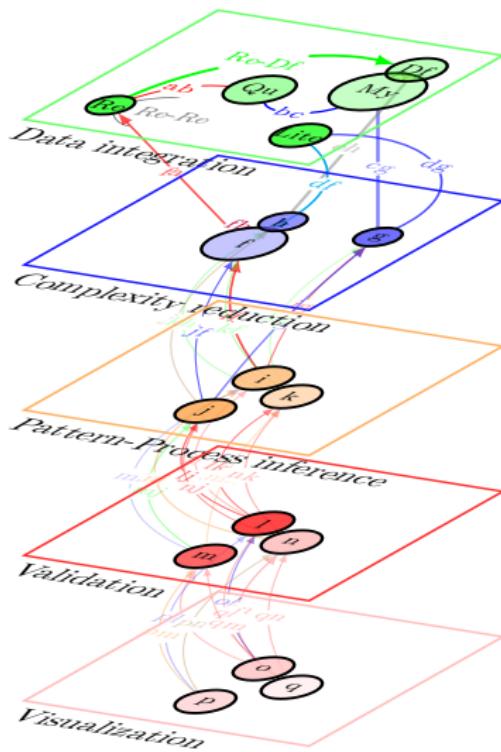
Carlos J. Melian

FishEc retreat, Brienz, March 22, 2019

Domain



Beyond domain

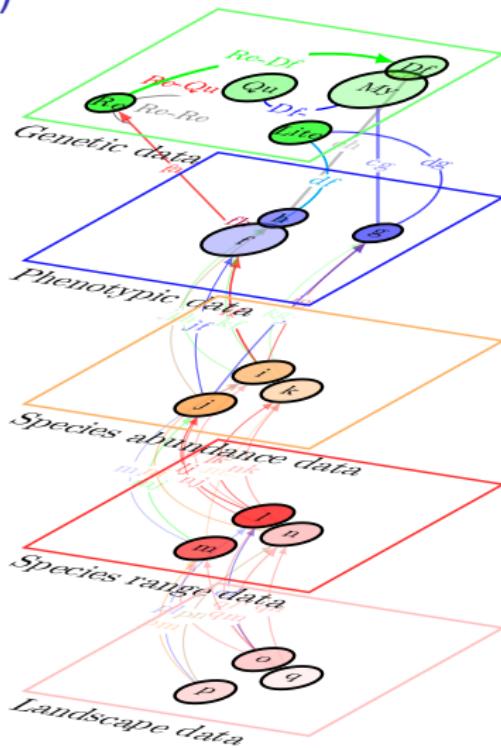


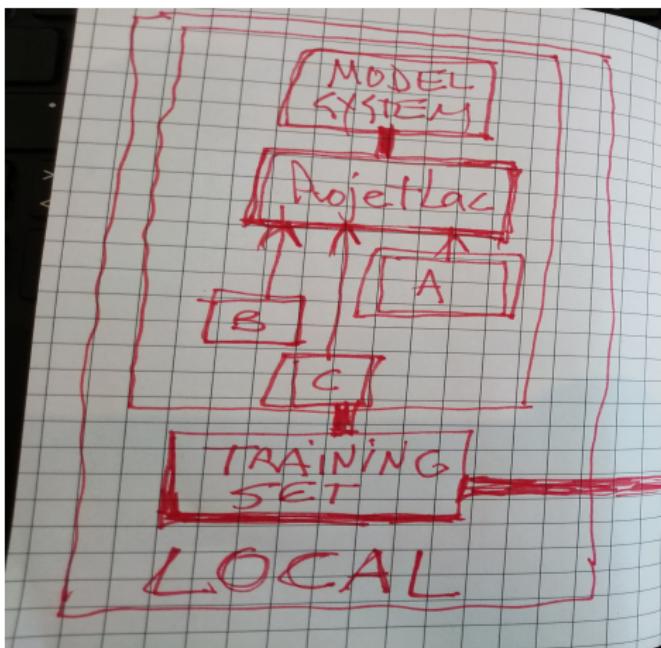
- ▶ Do we need layers to characterize biodiversity?

- ▶ Do we need layers to characterize biodiversity?
- ▶ How do intra- and inter-layer feed-backs and -forwards alter micro- and macro-eco-evo-devo biodiversity patterns?

- ▶ Do we need layers to characterize biodiversity?
- ▶ How do intra- and inter-layer feed-backs and -forwards alter micro- and macro-eco-evo-devo biodiversity patterns?
- ▶ How do intra- and inter-layer feed-backs and -forwards connect to biodiversity function loss in rapidly changing ecosystems?

Example: Data-intensive Tangling of the Webs of Life (DaTaWoL)





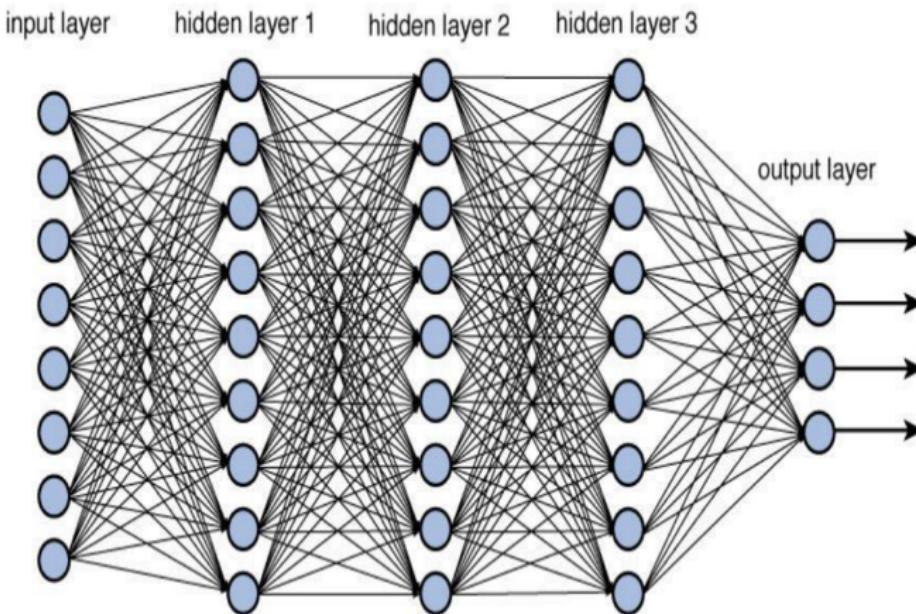
MAR 22
2019

DEEP PROCESS-BASED LEARNING NETWORKS IN BIODIVERSITY RESEARCH

GLOBAL DATABASE

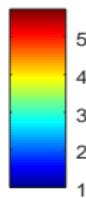
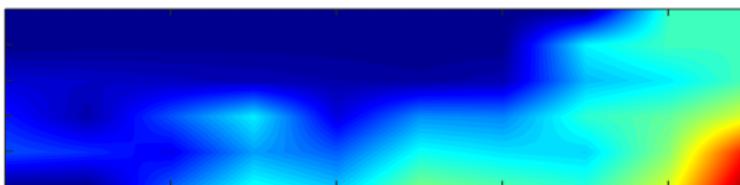
Example: Data-intensive Tangling of the Webs of Life (DaTaWoL)

Deep Neural Network

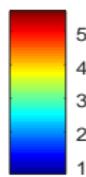
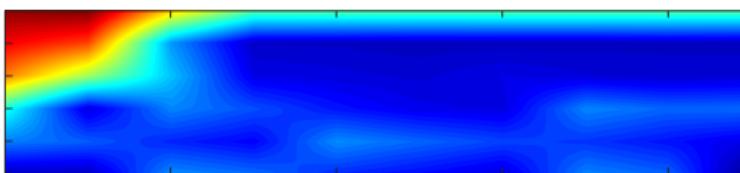


Predicting power map

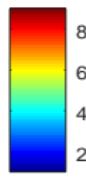
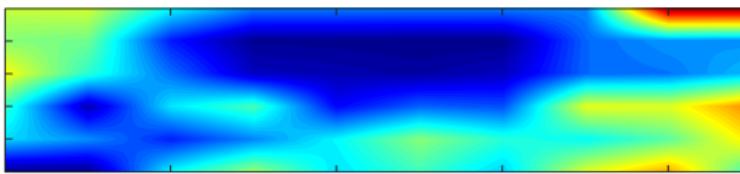
Process-based Inference



Understanding power map



Predicting-Understanding power map



Data-based Inference

Synthesis

○○○

Example

