

Deep learning for biologists

The course, the instructors, the
participants

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CNR, Milan (Italy)

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CREA, Lodi (Italy)



Welcome to Deep Learning for Biologists!



- 4 days, from 14:00 to 20:00, two breaks per day
- mix of:
 - slides → lectures
 - jupyter notebooks → hands-on sessions
 - do-it-yourself exercises
- introductory course aimed for:
 - biologists with little data analysis experience who wish to understand what all the fuss about DL is
 - more experienced biologists who wish to apply DL to their own research projects
 - a combination of the above



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- the two instructors will interchange during the 4 days in leading the lectures and practicals: the other will assist you if you have questions or technical problems (slack channels, etc.)
- questions are welcome at all times: don't be shy and ask if something is not clear!
- after the do-it-yourself exercises some of you will be invited to present their results and share their experience with the others
- at the end of the course, usually doubts remain: if you are interested, next week the instructors will organise a 1.5 hrs Zoom session to answer your questions and discuss your DL projects



Welcome to Deep Learning for Biologists!



- What is Deep Learning?
- The black box: a neural network for image recognition
- The building blocks of deep learning
- From logistic regression to neural networks: the not-so-black box
- Cross-validation and performance measures
- More building blocks: advanced stuff
- Convolutional neural networks
- Deep learning models for biological classification problems
- Transfer learning
- Deep learning for regression problems



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detailed timetable [here](#)



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- This is the **first edition** of the course: several aspects still need to be fine tuned
- Your feedback will be particularly important: during the course, during the wrap-up discussion on Thursday, or when we meet again next week for an aftermath discussion



Filippo in a slide

- Roma (*born*)
- Perugia (*MSc degree*)
- Cork, ICBF (*Web-design & Database*)
- Cremona, ANAFI (*Quantitative Genetics*)
- Guelph, CGIL (*Visiting Scientist*)
- Wageningen, WUR (*PhD*)
- Göttingen University (*post-doctoral researcher*)
- Lodi, PTP (*'omics in animals, plants, humans*)
- Milan - CNR (*tenured researcher*)
- Cardiff University (*biostatistician*)
- Milan - CNR (*senior researcher*)
- Bruxelles - ERC (*seconded national expert*)



Nelson in a slide

- Tortona (*born*)
- Pavia (*MSc computer engineering, PhD*)
- Fairfax, GMU (*informatics security*)
- Lodi, PTP (*database, biostatistician*)
- Lodi, CREA (*tenured researcher*)



The participants

So, what about you?

