

Time (Day and topic of the day)	Monday, 12.09	Tuesday, 13.09	Wednesday, 14.09	Thursday, 15.09	Friday, 16.09
	Fundamentals of Machine Learning (ML) Team at site: Barbara&Manuela	Applications of Deep Learning in Plant sciences Team at site: Barbara&Manuela	ML in plant breeding Team at site: Barbara&Manuela	ML in ecology and soil sciences Team at site: Barbara&Melanie	ML in agriculture & plant stress Team at site: Barbara&Melanie
<i>Pw of all online talks: 1216092022</i>		Breakfast	Breakfast	Breakfast	Breakfast
08:00-09:00	Arrival and check-in from 08:00 (08:45-09:00) Welcoming session	Analysis of vegetation parameters at global scale with deep learning Prof. Jan Dirk Wegner, UZH & ETH	Deep learning for plant genomics and crop improvement. Prof. Hai Wang, China Agricultural University, Beijing, China (https://ethz.zoom.us/j/69726895962?pwd=L1Y1VlpEdFA1bGN3UFZESjFKWHkydz02) (08:30-09:00) Identification of novel short protein coding genes in prokaryotes by proteogenomics – implications for biocontrol. Dr. Christian Ahrens, Agroscope	Data mining and ML in macro-ecological research. Prof. Niklaus E. Zimmermann, WSL	(08:30-09:30) ML & modelling in the context of crop phenotyping. Dr. Andreas Hund, ETH Zürich
09:00-10:30	Hands-on programming session: The basics of python programming Dr. Carol Alexandru, UZH	The fundamentals of Deep Learning. Prof. Fernando Perez Cruz, ETH and SDSC	Machine learning in plant -omics data. Dr. Aalt-Jan van Dijk, Wageningen University & Research Center Hands-on programming session: Predicting plant gene interactive networks using python. Dr. Aalt-Jan van Dijk, Wageningen University & Research Center	(09:00-09:45) Using ML to predict ecosystem-atmosphere fluxes. Dr. Benjamin Stocker, University of Bern (9:45-) Hands-on programming session: Applying ML on eddy covariance data using R. Dr. Benjamin Stocker, University of Bern	(09:30-10:00) Identification of stress based on machine learning applied to plant electro-physiology. Dr. Elena Najdenovska, HES-SO (10:00-10:30) Polyploid plants in natura studied by machine learning. Prof. Kentaro Shimizu, UZH
10:30-11:00	Coffe Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00-12:30	Continued (12:15-12:30) Tutorial on Google Colab: Intro: https://youtu.be/RLYoEyIHL6A 3 interesting features: https://youtu.be/rNgsWRZ2C1Y How to import data into Colab: https://youtu.be/1EHWYTUL6vU	Hands-on programming session: Applying DL using python. Manuel Knott, EMPA	(11:00-11:30) Image-based plant phenotyping using deep learning. Dr. Gert Kootstra, Wageningen University & Research Center (11:30-12:30) Hands-on programming session: Image-based plant phenotyping. Dr. Gert Kootstra, Wageningen University & Research Center	Continued	(11-11:30) Can We Use Machine Learning for Agricultural Land Suitability Assessment? Dr. Anders Bjørn Møller, Aarhus University https://ethz.zoom.us/j/68581570504?pwd=V01nL1FiSkFSQ1UwLzJ1UUU6SWdxZz09 (11:30-12:30) Hands on programming session for the Hackathon work

12:30-13:30	Lunch Break	Lunch Break	Lunch Break (plus coffe)	Lunch Break	Lunch Break (plus coffe)
13:30-15:00	The fundamentals of Machine Learning. Prof. Manuel Günther, UZH	<p>(13:30-14:30) Deep Learning for Plant Identification Dr. Michael Rzanny, Max Planck Inst. for Biogeochemistry, Germany (https://ethz.zoom.us/j/64059287412?pwd=cm15Uk9RZ2QwN0twNGdjeFRWk5OZz09)</p> <p>(14:30-15:00) Detecting deforestation from satellite images using DL. Dr. Thales Sehn Körting, National Institute for Space Research, Brazil (https://ethz.zoom.us/j/69655026639?pwd=MjZwWGN0YlQ0ak16ZElYbGlnK0VoZz09)</p>	<p>(13:30-14:30, 7:30am in the US) Interpretable machine learning: examples and practices. Prof. Shinhan Shiu, Michigan State University, USA (https://ethz.zoom.us/j/64301897585?pwd=RXpFZGtMZ1J5U2JvWWVHVHTAyVkg4UT09)</p>	<p>(13:30-14:00) Using Machine Learning for spatial mapping demonstrated with soil maps Dr. Madlene Nussbaum, Bern University of Applied Sciences</p> <p>(14:00-15:00) Hands-on programming session: Spatial mapping using R. Dr. Madlene Nussbaum, Bern University of Applied Sciences</p>	<p>(13:30-14:15) Robotic methods for precision agriculture and environmental monitoring Prof. Stefano Mintchev, ETH Environmental Robotics Laboratory</p> <p>(14:15-14:30) TraitSpotting, drone-based phenotyping. Dr. Andreas Hund, ETH Zürich</p> <p>Hackathon (Sharada Mohanty) (https://ethz.zoom.us/j/62646550795?pwd=bUdVMWlXWkVudXN4Wkq0YVZG0Ed0Q0T09)</p> <p>(14:40-14:50) Hackathon team presentations Team 1 and 2 (5-5 min)</p> <p>(14:50-15:00) Hackathon team presentations Team 3 and 4 (5-5 min)</p> <p>(15:00-15:30) Hackathon winner announcement & award ceremony</p>
15:00-15:30	Coffee Break	Coffee Break		Coffee Break	Wrap up
15:30-18:00	<p>(15:30-17:00) ML theory continued and Hands-on programming session using python. Prof. Manuel Günther, UZH</p> <p>(17:00-17:30) Introduction to the Hackathon challange Sharada P. Mohanty, AI Crowd</p>	<p>(15:30-16:00) Deep Learning for Image-Based Plant Disease Detection. Sharada P. Mohanty, AICrowd</p> <p>(16:00-17:30) Hands on programming session for the Hackathon work (online via Slack)</p>	<p>15:15-16:30 Excursion: Guided tour at the Milch Manufaktur Einsiedeln</p> <p>Free afternoon</p>	<p>(15:30-16:00) Observing and predicting patterns of biodiversity using remote sensing data in a machine learning framework. Dr. Andrea Paz, ETH Zürich</p> <p>(16:00-16:30) BioDetect: Deep Learning for Biodiversity Detection and Classification. Dr. Luca Pegoraro, WSL</p> <p>(16:30-17:00) Improving biodiversity protection through AI. Dr. Daniele Silvestro, University of Fribourg</p> <p>(17:00-18:00) Hands on programming session for the Hackathon work (online via Slack)</p>	
18:00-19:00	Dinner	Dinner	Barbecue	Dinner	
19:30-	Poster Session Welcome Aperitif	Hackathon Work	Free Evening	Hackathon Work	