Contribution ID: **4**   Type: **Overview talk**

Novel Machine Learning Approaches in Image-based Host-pathogen Interactions Analysis

Monday 6 December 2021 14:30 (20 minutes)

The research of interactions between the pathogens and their hosts is key for understanding the biology of infection. Commencing on the level of individual molecules, these interactions define the behavior of infectious agents and the outcomes they elicit. Discovery of host–pathogen interactions (HPIs) conventionally involves a stepwise laborious research process. However novel computational approaches including machine learning and deep learning allow to significantly accelerate the discovery process. One example of such approaches includes an algorithm for detecting intracellular and extracellular poxvirus virions in a 3D superresolution micrographs without specific immunohistochemical labelling. This is made possible through deep learning model inference from seemingly irrelevant fluorescence channels. Another example using allows predicting infection outcomes in a population of cell employing time-lapse microscopy data.

Physical Presentation

I am not so sure at this point if I would present physically.

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