

# Workshop - A CNN workflow to automate flow cytometry gating

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**Event in remote access.**

## **Context:**

- Manual gating of flow cytometric datafiles is time-consuming and may be error-prone, especially when the number of acquisitions becomes high.
- Using supervised machine learning methods trained on data validated by several experts is a way to automate this process.
- This workshop will present an automated workflow based on Convolutional Neural Networks (CNNs) as introduced in Fuchs et al. (2022) (to be published in Limnology & Oceanography: Methods).
- This workflow enables the automation of the manual gating process and the assessment of the prediction quality through dashboards and metrics.
- It takes raw CytoSense datafiles as inputs and returns the associated abundances of six phytoplankton functional groups.
- When validated by the user, the automatic results are sent as datasets to the ERDDAP data management platform

## **Aim of the workshop:**

The participants will learn how to use the workflow developed at the MIO: perform automatic classification, evaluate the quality of the gating, send the results to a distant database (in FAIR format).

## **Practical information:**

- The workshop is available in remote access (a Zoom link will soon be sent to the participants)
- The participants who wish to attend in person could follow the workshop at the Station Marine d'Endoume CNRS, Chemin de la batterie des lions, Bâtiment 4, 13007 Marseille.
- It will take place on two half-days during the week beginning on Monday June 20, and ending on Friday June 24, 2022 on the dates that suit the majority of people.
- Please fill the following form with your availabilities before June 10, 2022:  
<https://doodle.com/meeting/participate/id/dwpQj9Je>
- Installation and technical prerequisites for the workshop will soon be sent to the participants.



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