Deep learning e segmentazione per la biologia cellulare

Utilizzo del transfer learning per l'identificazione di cellule in microscopia

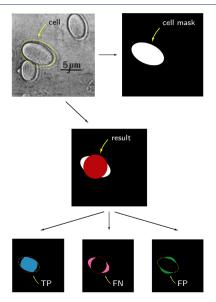
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Image segmentation

- Pixel-based
- Edge-based
- Region-based
- Model-based
- Supervisioned methods

$$\begin{split} \mathsf{CM} &= \frac{\mathit{TP}}{\mathit{TP} + \mathit{FN}} = \frac{\mathit{TP}}{\mathsf{Total\ arai\ in\ GT}} \\ \mathsf{CR} &= \frac{\mathit{TP}}{\mathit{TP} + \mathit{FP}} = \frac{\mathit{TP}}{\mathsf{Total\ area\ in\ BW}} \\ \mathsf{FM} &= \frac{2 \cdot \mathit{CM} \cdot \mathit{CR}}{\mathit{CM} + \mathit{CR}} \in [0;1] \end{split}$$



Transfer learning

Training dataset

Classification layer

Solver

Training options