

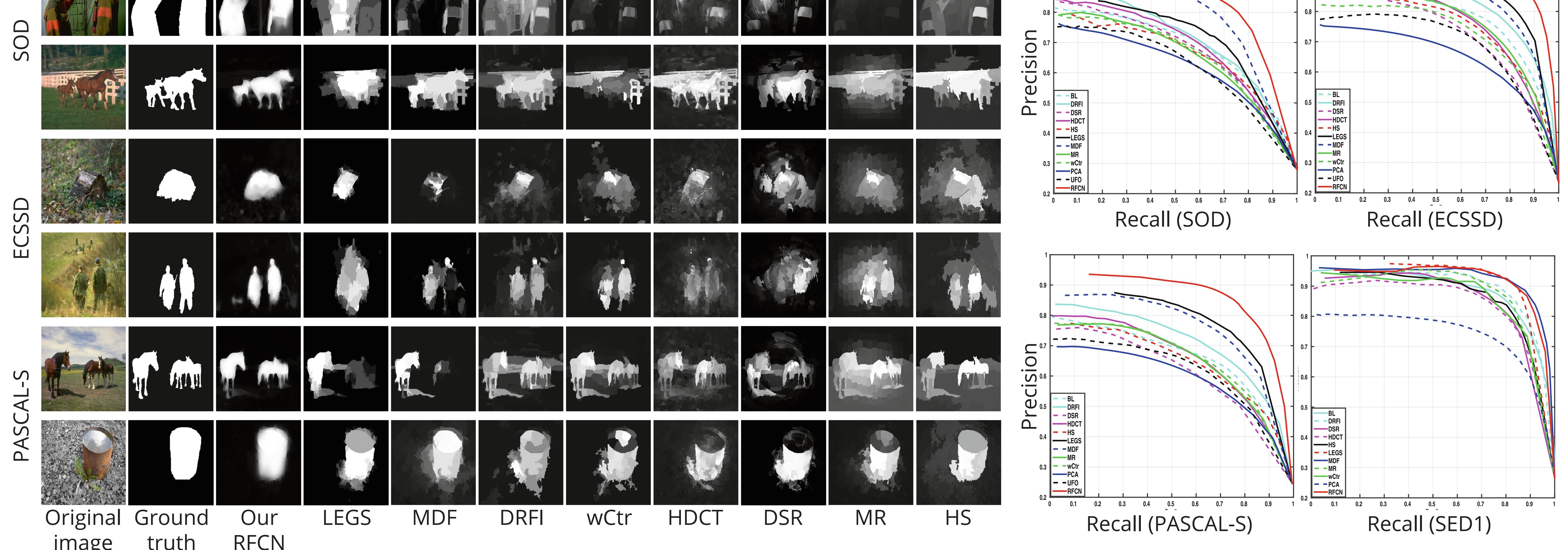
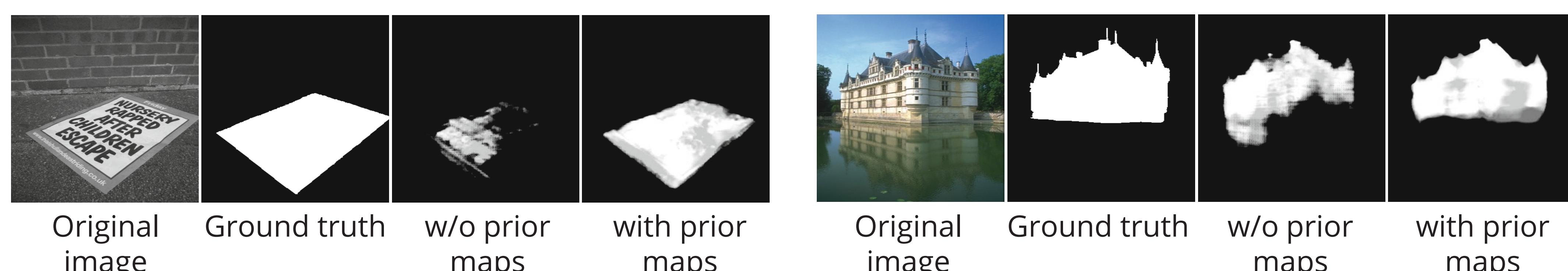
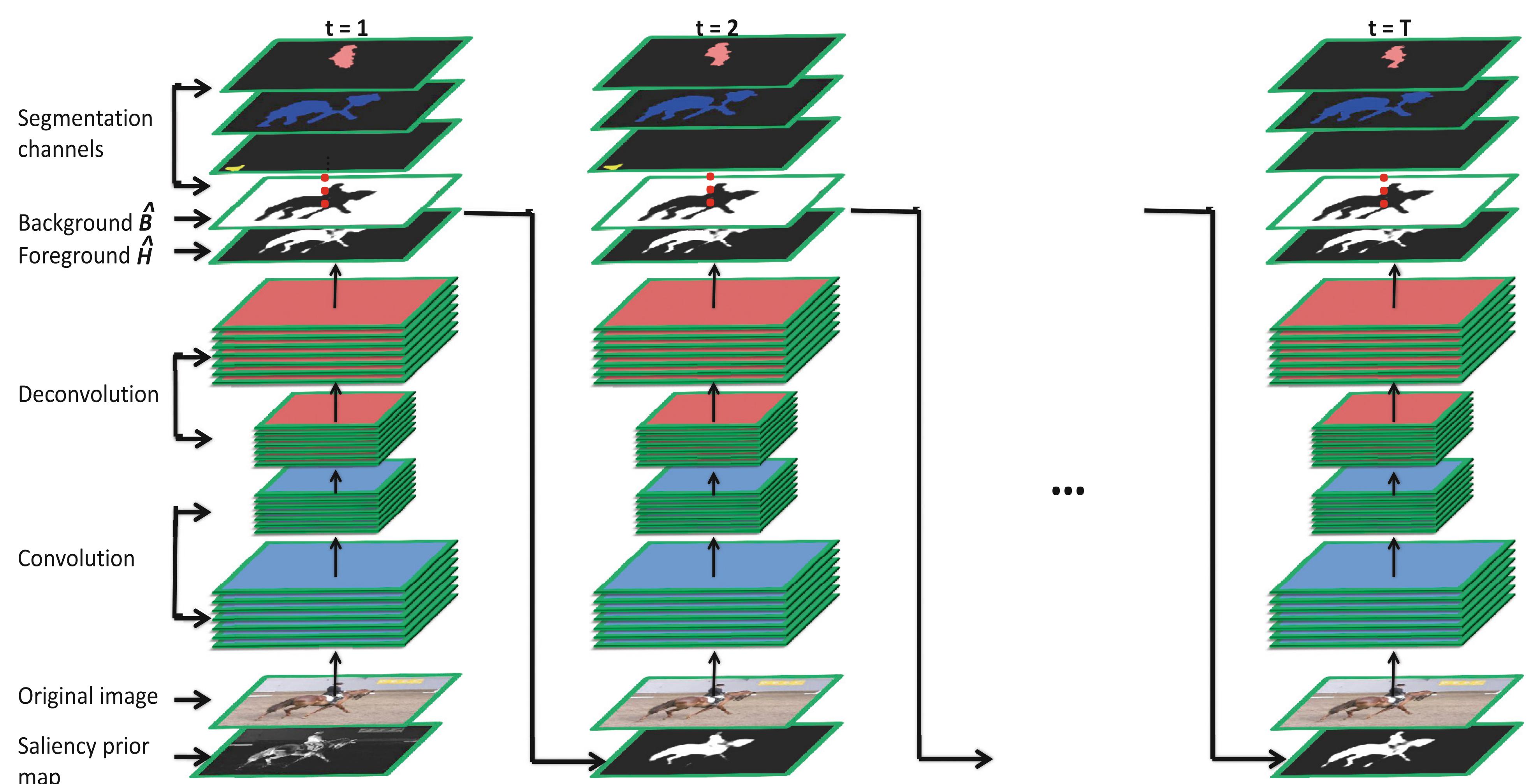
# Saliency Detection with Recurrent Convolutional Networks [1]

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- MOTIVATION**
- **Saliency Priors** are proven to be effective in previous work, but they are completely neglected in recent CNN based methods.
  - Current CNN based methods scan images patch-by-patch, which is **computational expensive**.
  - **Binary classification** problems, which represent saliency detection, have relatively weak supervision information.

- SOLUTION**
- Including **saliency priors** into the network to facilitate training and inference.
  - Using **Recurrent Convolutional Networks** to refine the output from the previous step.
  - A **RFCN pre-training method** for saliency detection using semantic segmentation data to both leverage strong supervision from multiple object categories and capture the intrinsic representation of generic objects.

- ARCHITECTURE**
- Recurrent fully convolutional network (RFCN) for saliency detection.
  - Input RGB image and a saliency prior map will be forwarded through the RFCN to obtain a predicted saliency map.
  - Obtained saliency map is used for next training step.



- CONCLUSION**
- Proposing an approach for saliency detection using recurrent fully convolutional neural network.
  - Integrates low level saliency prior knowledge and fully convolutional neural networks with a recurrent structure.
  - Experimental results on five benchmark datasets show favorable results against the state-of-the-art methods.

- REFERENCES**
- [1] Wang, Linzhao & Wang, Lijun & Lu, Huchuan & Zhang, Pingping & Ruan, Xiang. (2016). Saliency Detection with Recurrent Fully Convolutional Networks
  - [2] Li, X., Zhao, L., Wei, L., Yang, M., Wu, F., Zhuang, Y., Ling, H., Wang, J. (2015). Deepsaliency: multi-task deep neural network model for salient