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»UnFlow: Unsupervised Learning of Optical Flow with a Bidirectional Census Loss«

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PROBLEM

Circumvent the need for ground truth flow in convolutional networks

- ▶ Supervised learning requires rely on the availability of a large amount of data with ground truth optical flow
- ▶ Networks are trained on synthetically generated image
- ▶ Mismatch between synthetic training data and test scenarios
- ▶ The generalization to real scenes remains challenging

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RESULT

End-to-end unsupervised approach that demonstrates the effectiveness of unsupervised learning for optical flow



USP

This is the first universal closed form approach for end-to-end unsupervised learning that surpasses architecturally similar supervised approaches trained exclusively on synthetic data. By using classical energy-based optical flow methods to construct an unsupervised loss, the approach is groundbreaking in demonstrating the value of classical, non-learning results for deep learning approaches.

