

Abstract

Embodiments of the present application provide a monocular image-based model training method and apparatus, and a data processing device. The method comprises: first obtaining a first training image and a second training image acquired at different time points by a monocular image acquisition apparatus; then obtaining a first optical flow prediction result from the first training image to the second training image according to a photometric loss between the first training image and the second training image; and taking the first optical flow prediction result as an agent label, and performing optical flow prediction training by using the first training image and the second training image. By taking binocular image matching as a special case of optical flow prediction, by means of agent learning, a first optical flow prediction result obtained by taking two monocular images acquired at different time points as training samples is taken as an agent label to guide a second implementation of optical flow prediction learning of a model. Therefore, self-supervised learning of binocular image stereo matching can be achieved without depending on corrected binocular image samples, and optical flow prediction and stereo matching are performed by using a same model.