AI can render 3D objects from 2D pictures

人工智慧可用二維平面照片算出三維立體物體

Google subsidiary DeepMind unveiled a new type of computer vision algorithm that can generate 3D models of a scene from 2D snapshots：the Generative Query Network （GQN）.

The GQN, details of which were published in **Science**, can “imagine” and render scenes from any angle without any human supervision or training.

The two-part system is made up of a representation network and a generation network. The former takes input data and translates it into a mathematical representation（a vector）describing the scene, and the latter images the scene.

To train the system, DeepMind researchers fed GQN images of scenes from different angles, which it used to teach itself about the textures, colors, and lighting of objects independently of one another and the **spatial** relationships between them. It then predicted what those objects would look like off to the side or from behind.



Using its spatial understanding, the GQN could control the objects. And it self-corrects as it moves around the scene, **adjusting** its predictions when they prove incorrect.

【Word Bank】

scenes：名詞，場景、現場。

spatial：形容詞，空間的、空間性的。

adjust：動詞，調整、校正。

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