作者姓名：Jingbo Liu1 Oscar Kin-Chung Au2 Hongbo Fu2 Chiew-Lan Tai1

文章题目：Two-Finger Gestures for 6DOF Manipulation of 3D Objects

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摘要

多点触控输入设备提供了对三维物体6DOF（六自由度）操纵的有效的解决方案。主要集中在大尺寸多点触摸屏幕，现有的解决方案通常需要至少三个手指和全6DOF操纵双手相互作用。然而单手两指的操纵方式是首选，特别是对多点触控的便携式设备（如流行的智能手机），这样可以使更少的手遮挡屏幕，减轻手的负担，另一只手可以用来完成必须的任务比如举着手机。对于两个手指控制6个自由度我们的关键想法是通过检查两个手指的移动特性来引入两个操作模式和两个对应的手势，而不是像以往的做法一样通过增加手指的数量或者判断各个手指间的关系，我们通过基于学习的方法解决了此想法中所产生的二元分类问题。我们的试点实验表明，我们的只有两个手指的通常只有单手互动接触的技术，可以跟现有的最先进的技术相媲美甚至比它们更好。

**关键字**：6个自由度 两指手势 三维物体的操纵

Abstract

*Multitouch input devices afford effective solutions for 6DOF (six Degrees of Freedom) manipulation of 3D objects. Mainly focusing on large-size multitouch screens, existing solutions typically require at least three fingers and bimanual interaction for full 6DOF manipulation. However, single-hand, two-finger operations are preferred especially for portable multitouch devices (e.g., popular smartphones) to cause less hand occlusion and relieve the other hand for necessary tasks like holding the devices. Our key idea for full 6DOF control using only two contact fingers is to introduce two manipulation modes and two corresponding gestures by examining the moving characteristics of the two fingers, instead of the number of fingers or the directness of individual fingers as done in previous works. We solve the resulting binary classification problem using a learning-based approach. Our pilot experiment shows that with only two contact fingers and typically unimanual interaction, our technique is comparable to or even better than the state-of-the-art techniques.*

***Key ：****6DOF、* Two-Finger Gestures、Manipulation of 3D Objects