

人工智能

计算机动画中的虚拟角色路径规划研究

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摘要 动画或游戏中的虚拟角色的路径规划与机器人路径规划不同,它除了需要在运动空间找出一条无碰撞路径之外,更重要的是要体现出虚拟角色的生物行为特性。以人工鱼(晓媛鱼)为对象,在其活动的虚拟海洋环境中对其进行路径规划:将人工鱼抽象为一个有限状态机,采用人工势场方法。为体现人工鱼的生物行为特性,引入基于视觉和嗅觉的模糊判断。经动画仿真,得到了满意的效果。

Abstract The path-planning of virtual player is different from that of a robot's. Besides the need to find a non-collision path in its motion space, the former should also show the biologic characteristic of the virtual player. Artificial fish or Xiaoyuan's fish was researched in this paper. The path-planning was conducted in the virtual ocean, in which the fish lives. And the artificial fish was abstracted as a Finite State Machine(FSM). The fuzzy judgements based on biological vision and olfaction were introduced to artificial potential field to match the biologic characteristic of fish. By computer simulation, satisfying result was achived.

关键词 [人工鱼](#) [路径规划](#) [有限状态机](#) [人工势场方法](#)

Key words artificial fish; path-planning; FSM; artificial potential field

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