Graduate School of Science and Technology Master's Thesis Abstract

Laboratory name (Supervisor)	Interactive Media Design (Hirokazu Kato　(Professor))		
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Thesis title	Scene-aware Interaction between Virtual Characters and Real Scene in Augmented Reality		

Abstract

How to let virtual content interact more naturally with the real environment has always been a crucial issue in AR. In order for virtual characters to better interact with real scene, we propose a new AR framework that allows virtual content to perceive and interact with the real world on a semantic and geometric level, so that virtual content and the real world are more than just superimposition in AR. To this end, the real world is scanned and reconstructed to obtain 3D geometric models and 2D RGB images, then the geometric information is extracted from the 3D models and the semantic information is extracted from the RGB images, finally the two information are combined to achieve scene understanding. Moreover, the extracted semantic information is further designed to be flexible, so that a certain action of the virtual character will interact with a whole class of objects instead of just a specific single object, two design named object-class-behavior matching and rule-based object selection are proposed.