Petimo: Enhanced Tangible Social Networking Companion for Children

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ABSTRACT

"Petimo" is an interactive robotic toy which is both fun to use, face-to-face interaction with friends and at the same time protects children from the dangers of online social networks. By adding a physical proximity requirement for adding friends, Petimo increases security and adds a new physical dimension to social computing. The physical touch requirement will help prevent malevolent adult strangers being added as friends, and allowing children to fully exploit the new digital social world.

Keywords

Tangible Interfaces, Social Networking, Interaction Design, Smart Gadgets and Toys

1. INTRODUCTION

With the exponential expansion of the digital media, the attraction of teenagers and younger children to social networks and other activities in the cyberworld is growing rapidly. However, cyberspace is increasingly becoming an unsafe and a more victimized environment, especially for children [1]. This negative influence on children has become a serious social concern, making cyberspace a corrupted environment for them resulting in conflicts with parents, social isolation and communicating with unidentified people.

2. SYSTEM DESCRIPTION

Petimo is a small microcontroller based robot that includes a close proximity contact-less friend identification exchange function using radio frequency identification (RFID) technology. Children can add friends by activating the "Add Friend" option through the Petimo menu and physically touching their friends' Petimo. This internally results in exchanging of two unique 80-bit identification keys between two Petimo robots and sending this event to the online user verification system for authentication, after which the relationship is created. The user input sensing includes a smooth scrolling enabled resistive touch sensing pad for menu navigation, pressure activated squeeze areas of the robot surface facilitates the exchange of special gifts and emoticons online. Users can experience a multimodal engagement, visually via the miniature display, audibly by an embedded sound module producing cute sounds and through haptics using a vibrotactile effects generator.

Petimo could be connected to any social network and provide safety and security for children. As a proof of concept, we have developed a 3D virtual world, "Petimo-World" which demonstrates all of the basic features that can be realized with traditional online social networks and in addition, it provides interesting interactions such as visualization of your friends spatial arrangement to understand closeness of friendship, personalized avatars, and sending special gifts/emoticons by squeezing physically.

3. CONCLUSION

Petimo is an interactive soft robotic device, extending its capabilities to change social networks fundamentally. It provides a novel approach for children to make friends easily in a more protected and safe social networking environment. Petimo together with Petimo-World, strongly focuses on building real social networks through interactions as they interact by squeezing, touching and sending gifts or emoticons to their friends, family, and parents and creates child's safe path towards a secured and personally enriching social networking experience.

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5. REFERENCES

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ACE '09 Athens, Greece