**Witcha Feungchan**



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**Education:** Ph.D. in Electronic Systems Engineering, University of Regina, Canada

M.Sc. in Computer Science (2002), Chulalongkorn University, Thailand

B.Eng. in Computer Engineering (2000), Khon Kaen University, Thailand

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| **RESEARCH EXPERIENCE:**  - Software agent technologies  - New game design and architecture  - Ubiquitous computing  - Pervasive computing  - Virtual reality & Augmented reality  - New media in entertainment  - Human computer interactions  - Artificial intelligence in video game  - ASIC design and testing | **TEACHING EXPERIENCE:**  - Video Game Design  - Software Engineering  - Advanced Digital System Design  - Digital System Simulation using VHDL  - Computer Programming  - Multimedia Programming  - Research Methodology  - Advanced Video Game Design  - Seminar I-II |

**DISSERTATION DETAIL:**

**An Agent-Based Novel Interactive Framework for Ubiquitous Electronic**

Nowadays, computer and video games are growing fast and are becoming more and more sophisticated in terms of the quality of graphics and Artificial Intelligence (AI), both of which increase the level of immersion and challenge. Most users remain in front of their computer or television playing games for a long time, which is not healthy both physically, due to lack of exercise, and mentally, due to the fact that games cause users to be isolated from society or even their family. A solution to these problems is to create games that turn these users away from their computer or television in order to let them experience social interaction and physical activities in the real world. The hypothesis of this research is that adding ubiquity, an interactivity model, and believable in-game characters to current games can bring new experience, engagement, enjoyment, and immersion for users, while simultaneously promoting both exercise and socialization. This research proposes a general framework for the new type of gameplay using mobile agent technologies as the main architectural element of the framework, which is generic enough to be able to be adapted and extended into future applications. To demonstrate the soundness of the concepts at the basis of the general framework, a prototype is developed: “Ramakian Online Game (ROG).” A game evaluation model was created to justify the quality of the game and was used as a guide for creating a good game. The game design criteria in the game evaluation model were considered as the primary design criteria for the game development framework and prototype. ROG was tested with the public audiences and it received good feedbacks from the audiences and a good evaluation score from the game evaluation model. According to the testing results, the research hypothesis was confirmed.

**EMPLOYMENT HISTORY:**

2002-present Lecturer, Khon Kaen University, Thailand

**AWARDS:**

National Software Contest 2000, Thailand, First prize (co-recipient).

Asia Game Award 2010, Consolation & Consolation (Creative) prizes:

**ACADEMIC AWARDS:**

Senior Project contest award, Khon Kaen University, Thailand

Faculty of Graduate Studies and Research Graduate Scholarship (2005 Winter, 2005 Spring/Summer, 2006 Spring/Summer)

Faculty of Graduate Studies and Research Graduate Teaching Assistantship (2005 Fall, 2006 Winter, 2006 Fall, 2007 Winter, 2007 Fall)

**PUBLICATIONS:** [1]–[18]

[1] W. Feungchan and L. Benedicenti, “Designing fun games: an empirical study,” presented at the GDC Canada, Vancouver, 2009.

[2] W. Feungchan, “AI Characters in a Mobile Phone,” in The 25th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 2010), Pattaya, Thailand, 2010.

[3] W. Feungchan, L. Benedicenti, and C. Chan, “A Selection System for Agent Visualization Methods (SSAV),” in The 25th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 2010), Pattaya, Thailand, 2010.

[4] L. Benedicenti and W. Feungchan, “EMPIRICAL STUDY ON GAME EVALUATION,” in The 25th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 2010), Pattaya, Thailand, 2010.

[5] L. Benedicenti, W. Feungchan, and S. Petty, “Dynamic Interfaces and Optimal Screen Real Estate: A Case Study,” in The 25th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 2010), Pattaya, Thailand, 2010.

[6] P. Chaichitwanidchakol and W. Feungchan, “A Motion Detection Framework for Mobile Devices,” in The 26th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 2011), Gyeongju, Korea, 2011.

[7] P. Aimsupasit and W. Feungchan, “Factors Affecting the Quality of MMORPG Online Games in Bangkok,” Adv. Mater. Res., vol. 931–932, pp. 1472–1476, May 2014.

[8] W. Feungchan, J. Jiranuwuttanawong, C. Mokkhamakkul, J. Junrat, and K. R. Saikaew, “Applying Ubiquitous Computing on Mobile Devices to Signal for Help: EmergencySOS Application,” in The 29th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 2014), Phuket, Thailand, 2014.

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[11] K. Meuansechai, W. Feungchan, and N. Srisawasdi, “Answer Me for Learning: Development of Ubiquitous Learning System for Conducting Context-aware Learning Experience,” in 2nd International Conference on Innovation in Education (ICIE2015), Nakhon Pathom, Thailand, 2015.

[12] T. Mathuros, W. Feungchan, N. Srisawasdi, and M. Hiangsa, “The Fruit Eater: A Seriously Game To Promote Fruit and Vegetable Consumption among Elementary School Students,” in 2nd International Conference on Innovation in Education (ICIE2015), Nakhon Pathom, Thailand, 2015.

[13] K. Kongpet, N. Srisawasdi, and W. Feungchan, “Combining Context-aware Ubiquitous Learning and Computer Simulation: A Lesson Learned in Elementary Science Education,” in The 23rd International Conference on Computers in Education (ICCE2015), 2015.

[14] M. Hiangsa, N. Srisawasdi, and W. Feungchan, “The Effect of Pedagogy-embedded Digital Game in Primary Science Education: A Comparison of Students’ Understanding of Vitamin,” in The 23rd International Conference on Computers in Education (ICCE2015), 2015.

[15] P. Chaichitwanidchakol and W. Feungchan. Exploring Mobile Game Interactions. Int. Journal of Electrical and Comp. Engineering. 2018; 8(5): 3954-3965

[16] K. R. Saikaew et al., "Applications to Screen Children with Autism Spectrum Disorder," 2019 23rd International Computer Science and Engineering Conference (ICSEC), 2019, pp. 70-75

[17] P. Chaichitwanidchakol and W. Feungchan. Design and Implementation of Interactive Mobile Application for Autistic Children in Physical Education Class. International Journal of Interactive Mobile Technologies (iJIM). 2020, 14. 134. 10.3991/ijim.v14i14.15477.

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[19] Feungchan, W. (2023), "Serious Games and Applications for Special Education in the VUCA World", Narot, P. and Kiettikunwong, N. (Ed.) Interdisciplinary Perspectives on Special and Inclusive Education in a Volatile, Uncertain, Complex & Ambiguous (Vuca) World (International Perspectives on Inclusive Education, vol. 20), Emerald Publishing Limited, Bingley, pp. 203-218.

[20] P. Chaichitwanidchakol and W. Feungchan, “Design and Implementation of a Breathing Interaction System for Autistic Thai Children,” International Journal of Mobile Learning and Organisation, vol.18 no.1, pp.74 - 100, 2024.