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Computer simulation of electronic game addiction

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The author merged his human narcotic use emulator presented at OMICS International Conference on Addiction Research & Therapy, August 2012, Las Vegas, with his game-playing A.I. robot "ANNIE" (Android with Neural Network, Intellect and Emotions) to create an artificial entity which can exhibit the symptoms of electronic game addiction disorder (American Psychiatric Association). The author wrote a simple first person shooter test game program inspired by the 1993 PC game Doom. Program parameters were tuned to adjust game-play difficulty, i.e.: number and location of opponents, health restoration packs, ammunition and armor; the aiming accuracy of enemies and their speed of movement; placement of obstacles, windows and crossfire shooters. ANNIE, too, has internal variables which affect her game play: her dexterity and shooting accuracy, her frustration with missed shots or with hits on her by enemies, her navigation of the maze, her sensitivity to outside distractions, and her tolerance to game losses. ANNIE's desire to continue playing when faced with increasing (simulated) hunger, thirst, fatigue, need for bathroom services or other distractions can be adjusted: resistance to body discomfort, pleasure responses to game success and prevailing mood. Results: by changing variables (of the game and the A.I.), ANNIE played the game safely, limiting her playing time and showing no signs of addictive behavior; or she succumbed to uncontrolled, habitual gameplay activity.

Biography

Paul Frenger, MD is a Senior Member of IEEE, life member of ACM and a practicing physician who has been professionally involved with computers since 1976. He has published about 200 articles in the bioengineering and computer literature, was editor of the ACM SIGForth Newsletter (5 years), Associate Editor for ACM Sigplan Notices (13 years), and has three computer patents. He is active in artificial intelligence, robotics, bioengineering, space science and green industrial design.

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