A man has been arrested in Japan on suspicion of carrying out a virtual mugging spree by using software "bots" to beat up and rob characters in the online computer game Lineage II. The stolen virtual possessions were then exchanged for real cash.

The Chinese exchange student was arrested by police in Kagawa prefecture, southern Japan, the Mainichi Daily News reports.

Several players had their characters beaten and robbed of valuable virtual objects, which could have included the Earring of Wisdom or the Shield of Nightmare. The items were then fenced through a Japanese auction website, according to NCsoft, which makes Lineage II. The assailant was a character controlled by a software bot, rather than a human player, making it unbeatable.

Ren Reynolds, a UK-based computer games consultant and an editor of the gaming research site Terra Nova, says the case highlights the problem of bots in virtual worlds.

**Arms race**

By performing tasks within a game repetitively or very quickly, bots can easily outplay human-controlled characters, giving unscrupulous players an unfair advantage. Many games firms employ countermeasures to detect this bot activity. For example, they can ask the character questions or present them with an unfamiliar situation and monitor their response.

"There's an ongoing war between people who make bots and games companies," he told New Scientist. "And making real money out of virtual worlds is getting bigger."

Furthermore, the line between virtual and real cash has already disappeared. The game EverQuest, for example, lets players buy and sell virtual items and characters for real money through an authorised online trading site.

**Money breeds crime**

Reynolds says the growing number of online game players will only increase the incentive for scammers. "There's nothing exceptional about the virtual world," he says. "Wherever there is that sort of money, there's always crime too."

Bruce Schneier, a renowned computer security expert, adds that the distinction between virtual and real crime is rapidly disappearing. He points to recent reports of crooks trying to hack into games or steal players account information to make cash.

"I regularly say that every form of theft and fraud in the real world will eventually be duplicated in cyberspace," Schneier wrote on his weblog. "Perhaps every method of stealing real money will eventually be used to steal imaginary money, too."

There are also reports that some online scammers are using "sweatshops" in countries such as China and Indonesia in which people monitor teams of bots in order to generate money whilst avoiding bot traps.