

Artificial Intelligence to tackle rogue traders

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As the Credit Crunch continues to affect the worldwide markets the need for efficient methods to combat financial fraud has become more important than ever. Now researchers at the University of Sunderland are working on a smart computer that they believe will be able to detect insider trading fraud within the stock exchange almost instantly.

CASSANDRA (Computerised Analysis of Stocks and Shares for Novelty Detection of Radical Activities) aims to create a prototype software tool to tackle financial fraud. The project has been awarded £90,000 by Northstar Funding to investigate the feasibility of combining [Artificial Intelligence](#) technologies with headline analysis techniques to track suspicious share dealing.

The Financial Times recently quoted as many as 25% of UK share dealing may be tainted by insider trading. A study commissioned by the New York Times suggested as many as 41% of North American deals may be similarly affected.

Dr Dale Addison is project manager for the CASSANDRA project. Dr Addison believes the development of effective anti fraud methods has never been more important.

He says: "The figures from the FT and the New York Times research are extraordinary, especially when you consider that the UK and USA stock markets are amongst the most highly regulated in the world - so God knows what is happening in other countries.

"But the big problem with current anti-fraud systems is 'false positives'. The [stock market](#) is highly volatile with stocks and shares going up and down all of the time, and sometimes there is a perfectly rational explanation for these fluctuations. As many as 75% false positive flagging has been observed by some systems.

"In contrast the CASSANDRA system looks at the news stories which may affect a particular

company. So if two companies are in the process of a merger and someone gets wind that the merger isn't going ahead, a key player will go out and buy or sell stock shares and make a killing on the markets. Using our system that information may be detectable by analysis of news."

The big difference with Sunderland's CASSANDRA system is that it will analyse the movement of particular stocks and shares for a specific company. At the same time it will also access headline news from providers such as Reuters, Bloomberg and Associated Press and the company's own websites to see what news is available to their employees. This will enable them to track potential insider trading.

Sunderland's team are working in conjunction with a Canadian company called Measured Markets who are providing the academics with data on the US and UK stock markets.

Dr Addison says: "With CASSANDRA We think we have a technique which has identified a gap in the market. This system will have the ability to allow users to look at news information and rank it according to how significant an impact it has had on share dealing.

The initial research in the prototype software tool is funded until December 2009, and Dr Addison and his team have more ambitious plans to track down rogue traders using Artificial Intelligence in the future.

"We have plans to develop a larger system which will allow CASSANDRA to tackle not just insider trading but larger issues related to 'market abuse' such as false, exaggerated or highly misleading news stories released by individuals or groups. Such stories can massively influence the markets, and yield huge profits for unscrupulous traders.

"If successful, CASSANDRA will make it more difficult for unscrupulous traders to make a killing on the stock market at the expense of others."

Source: University of Sunderland

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