



Commercial Opportunity

Multiple Watermark Extraction Technique

Researchers at Aston University have devised a method of embedding multiple watermarks in data, and preserving the order in which the watermarks were embedded. Aston's Business Partnership Unit is now actively seeking industrial partners to commercialise this highly innovative technique.

Highlights

- Embeds multiple watermarks in data
- Preserves the embedding order of the watermarks
- Enables tracing of data misuse

Background

While it is already possible to embed multiple watermarks within a single set of data, current watermark embedding techniques do not provide a sufficiently reliable method of determining the order in which the watermarks were embedded. An ability to preserve watermark order would have important uses in applications requiring knowledge of the sequence of access events, such as recording the last person to access a data record and for tracing the misuse of data.

The Technology

Aston researchers have invented a reliable method of determining the order in which multiple watermarks are embedded in data. The technology uses blind source separation techniques, in which the departure from independence of a blind source decomposition is exploited, allowing the embedding and recovery of multiple watermarks in the order in which they were embedded. This is a rare property that has many potential uses and is a major advance over existing methods. The approach can be applied to single and multivariate time series, of still images, audio and video.

Applications

This technology is particularly useful for organizations that use confidential digital data, such as healthcare organizations deploying Picture Archiving and Communications Systems (PACS) systems, and military and intelligence-gathering organizations that need to protect sensitive data, such as satellite images or audio and video recordings of operations.

- Traitor tracing – Tracing the origin of intentional or accidental data breaches by trusted insiders
- Deterring privileged insiders from illegitimately distributing confidential data
- Providing an embedded audit trail within digital data, showing who has accessed the data, when, and what tasks were undertaken

Intellectual Property Protection

A PCT patent application is currently pending to protect this technology:

<i>Title</i>	<i>Pending Patents</i>	<i>Priority Claimed</i>	<i>Our Ref</i>
Watermark Encoding and Decoding	PCT/GB2010/000308	March 2, 2009	PAT-2007-018

Further Information

Further information can be made available and commercial discussions commenced on entering into a non-disclosure agreement.

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