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**Kozyrczak et al.**

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(54) **REPRESENTING USER BEHAVIOR INFORMATION**

(75) Inventors: **Maciek Kozyrczak**, Bothell, WA (US);  
**Cheng Che Chen**, Bellevue, WA (US);  
**Basem Nayfeh**, Mercer Island, WA (US)

(73) Assignee: **AudienceScience Inc.**, Bellevue, WA (US)

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**Related U.S. Application Data**

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(52) **U.S. Cl.**  
USPC ..... **707/790; 707/748**

(58) **Field of Classification Search**  
None  
See application file for complete search history.

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*Primary Examiner* — Debbie Le  
(74) *Attorney, Agent, or Firm* — Perkins Coie LLP

(57) **ABSTRACT**

A facility for analyzing user behavior information is described. The facility receives a stream, of user behavior information. The facility augments a representation of user behavior in accordance with the received stream of user behavior information. The representation augmented by the facility is a sparse matrix of user behavior facts. The facility analyzes the sparse matrix to obtain an analysis result for the received stream of user behavior.

**20 Claims, 6 Drawing Sheets**

**Conceptual View Table** 100

action	request page in electronics category	use loan calculator	request breaking news page	perform shopping checkout
user name				
ned@hotmail.com	4/4/05 5 occurrences			4/1/05 1 occurrence
jean@yahoo.com			3/23/05 2 occurrences	
art@aol.com		4/8/05 11 occurrences		4/8/05 1 occurrence

111      113      114