

## Visual Summary of Grounds

<u>Claim Element</u>	<u>1: Levy/Arya</u>	<u>2: Conwell</u>	<u>3: Wood</u>	<u>4: Ghias/Philyaw</u>
1. A computer system comprising:	Y	Y	Y	Y
one or more electronic communications devices;				
one or more processors operatively connected to the one or more electronic communications devices; and				
one or more computer readable media operatively connected to the one or more processors and having stored thereon computer instructions for carrying out the steps of:				
(a) maintaining, by the computer system, a database comprising:				
(1) first electronic data related to identification of one or more reference electronic works; and				
(2) second electronic data related to action information comprising an action to perform corresponding to each of the one or more reference electronic works;				
(b) obtaining, by the computer system, extracted features of a first electronic work;				
(c) identifying, by the computer system, the first electronic work by comparing the extracted features of the first electronic work with the first electronic data in the database using a non-exhaustive neighbor search;				
(d) determining, by the computer system, the action information corresponding to the identified first electronic work based on the second electronic data in the database; and				
(e) associating, by the computer system, the determined action information with the identified first electronic work.				
2. The computer system of claim 1, wherein the step of obtaining comprises receiving the first electronic work and extracting the extracted features from the first electronic work.	Y	Y	Y	Y
3. The computer system of claim 2, wherein the first electronic work is received from at least one of a set-top-box, a video recorder, a cell phone, a computer, or a portable device.	Y	Y	Y	Y
4. The computer system of claim 1, wherein the step of obtaining comprises receiving the extracted features.	N	N	N	N

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5. The computer system of claim 4, wherein the extracted features are received from at least one of a set-top-box, a video recorder, a cell phone, a computer, or a portable device.	N	N	N	N
6. The computer system of claim 1, wherein the step of obtaining comprises receiving the first electronic work and the extracted features of the first electronic work.	Y	Y	N	N
7. The computer system of claim 6, wherein the first electronic work and the extracted features of the first electronic work are received from at least one of a set-top-box, a video recorder, a cell phone, a computer, or a portable device.	Y	N	N	N
8. The computer system of claim 1, wherein at least one of the first electronic work or the extracted features of the first electronic work is obtained from at least one of a set-top-box, a video recorder, a cell phone, a computer, or a portable device that stores commercial transaction data, and wherein the action information comprises a commercial transaction, and the one or more computer readable media have stored thereon further computer instructions for carrying out the additional step of:	Y	Y	Y	Y
electronically performing the commercial transaction using the stored commercial transaction data.				
9. The computer system of claim 1, wherein at least one of the first electronic work or the extracted features of the first electronic work is obtained from at least one of a set-top-box, a video recorder, a cell phone, a computer, or a portable device, and wherein the action information comprises commercial transaction data, and the one or more computer readable media have stored thereon further computer instructions for carrying out the additional step of:	Y	Y	Y	N
electronically performing the commercial transaction through the at least one of a set-top-box, a video recorder, a cell phone, a computer, or a portable device using the commercial transaction data.				
10. The computer system of claim 8, wherein the stored commercial transaction data comprises at least one of a purchaser's name, a purchaser's address, or credit card information.	Y	Y	Y	Y

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11. The computer system of claim 1, wherein the action comprises at least one of directing a user to a website related to the first electronic work, initiating an e-commerce transaction, or dialing a phone number.	Y	Y	Y	Y
12. The computer system of claim 1, wherein the action comprises providing and/or displaying additional information in association with the first electronic work.	Y	Y	Y	Y
13. A computer system comprising:	Y	Y	Y	Y
one or more electronic communications devices;				
one or more processors operatively connected to the one or more electronic communications devices; and				
one or more computer readable media operatively connected to the one or more processors and having stored thereon computer instructions for carrying out the steps of:				
(a) maintaining, by the computer system, one or more databases comprising:				
(1) first electronic data comprising a first digitally created compact electronic representation of one or more reference electronic works; and				
(2) second electronic data related to an action, the action comprising providing and/or displaying an advertisement corresponding to each of the one or more reference electronic works;				
(b) obtaining, by the computer system, a second digitally created compact electronic representation of a first electronic work;				
(c) identifying, by the computer system, a matching reference electronic work that matches the first electronic work by comparing the first electronic data with the second digitally created compact electronic representation using a non-exhaustive neighbor search;				
(d) determining, by the computer system, the action corresponding to the matching reference electronic work based on the second electronic data in the database; and				
(e) associating, by the computer system, the determined action with the first electronic work.				
14. The computer system of claim 13, wherein the action further comprises providing a link to a site on the World Wide Web associated with the advertisement.	Y	Y	Y	Y

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15. The computer system of claim 13, wherein the action further comprises electronically registering a user with at least one of a service or a product related to the advertisement.	N	N	N	N
16. The computer system of claim 13, wherein the action further comprises electronically providing at least one of a coupon or a certificate related to the advertisement.	N	N	N	N
17. The computer system of claim 13, wherein the action further comprises automatically dialing a telephone number associated with the advertisement.	N	N	N	N
18. The computer system of claim 13, wherein the action further comprises collecting competitive market research data related to the advertisement.	Y	N	N	Y
19. The computer system of claim 13, wherein the action further comprises purchasing a product or service related to the advertisement.	Y	Y	Y	Y
20. The computer system of claim 13, wherein the action further comprises allowing a user to interact with a broadcast related to the advertisement.	N	N	N	N
21. The computer system of claim 1, further comprising the step of transmitting, by the computer system, the determined action as associated with the first electronic work.	Y	Y	Y	Y
22. The computer system of claim 1, wherein the one or more electronic works comprise at least one of a video work, an audio work, or an image work.	Y	Y	Y	Y
23. The computer system of claim 1, wherein the one or more computer readable media have stored thereon further computer instructions for carrying out the additional steps of:	Y	Y	N	Y
(f) obtaining, by the computer system, second extracted features of a second electronic work;				
(g) searching, by the computer system, for an identification of the second electronic work by comparing the second extracted features of the second electronic work with the first electronic data in the database using a non-exhaustive neighbor search; and				
(h) determining, by the computer system, that the second electronic work is not identified based on results of the searching step.				

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24. The computer system of claim 13, wherein the one or more computer readable media have stored thereon further computer instructions for carrying out the additional steps of:	Y	Y	N	Y
(f) obtaining, by the computer system, second extracted features of a second electronic work to be identified;				
(g) searching, by the computer system, for an identification of the second electronic work by comparing the second extracted features of the second electronic work with the first electronic data in the database using a non-exhaustive neighbor search; and				
(h) determining, by the computer system, that the second electronic work is not identified based on results of the searching step.				
25. A computer system comprising:	Y	Y	Y	Y
one or more electronic communications devices;				
one or more processors operatively connected to the one or more electronic communications devices; and				
one or more computer readable media operatively connected to the one or more processors and having stored thereon computer instructions for carrying out the steps of:				
(a) maintaining, by the computer system, one or more databases comprising:				
(1) first electronic data comprising a first digitally created compact electronic representation comprising an extracted feature vector of one or more reference electronic works; and				
(2) second electronic data related to action information, the action information comprising an action to perform corresponding to each of the one or more reference electronic works;				
(b) obtaining, by the computer system, a second digitally created compact electronic representation comprising an extracted feature vector of a first electronic work;				
(c) identifying, by the computer system, a matching reference electronic work that matches the first electronic work by comparing the first electronic data with the second digitally created compact electronic representation of the first electronic work using a non-exhaustive neighbor search;				

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(e) associating, by the computer system, the determined action information with the first electronic work.				
26. The computer system of claim 25, wherein the one or more computer readable media have stored thereon further computer instructions for carrying out the additional steps of:	Y	Y	N	Y
(f) obtaining, by the computer system, a third digitally created compact electronic representation comprising an extracted feature vector of a second electronic work;				
(g) searching, by the computer system, for a matching reference electronic work that matches the second electronic work by comparing the third digitally created compact electronic representation of the second electronic work with the first electronic data in the database using a non-exhaustive neighbor search; and				
(h) determining, by the computer system, that a matching reference electronic work that matches the second electronic work does not exist based on results of the searching step.				
27. The computer system of claim 13, wherein the extracted feature is extracted using frequency based decomposition.	N	N	Y	Y
28. The computer system of claim 13, wherein the extracted feature is extracted using principal component analysis.	N	N	N	N
29. The computer system of claim 13, wherein the extracted feature is extracted using temporal sequence of feature vectors.	N	N	Y	Y
30. The computer system of claim 13, wherein the one or more computer readable media have stored thereon further computer instructions for carrying out the additional step of transmitting, by the computer system, the determined action information as associated with the first electronic identified work.	Y	Y	Y	Y