New connection on: : 07-12-2017 : 03:17:43 - Last disconnection on: : 07-12-2017 : 02:46:58

V 4.0.0.44164(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201714)) (RPM D201714)

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 16] OCR and legal and text

Results in EPODOC **1**

[SS 17] ..v

[EPODOC: SS 17] OCR and classification and rule

Results in EPODOC **2**

[SS 18] OCR and rule and name and date

Results in EPODOC **0**

[SS 19] OCr and name and date

Results in EPODOC **7**

[SS 20] ..v

[EPODOC: SS 20] OCR ans pattern´

Results in EPODOC **0**

EPODOC: term 'OCR ANS PATTERN' not found in index 'BI'. *WARNING(1)*

[SS 21] OCR and pattern

Results in EPODOC **347**

[SS 22] 21 and classification

Results in EPODOC **13**

[SS 23] ..v

[EPODOC: SS 23] ..li

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PN - CN106940804 A 20170711

PR - CN20171102141 20170223

AP - CN20171102141 20170223

DT - I

CT - || STSE (A)
US7570816 B2 20090804 [A] (BARGERON DAVID M [US], et al)
[A] 1-10
* 全文 *;
CN101908136 A 20101208 [A] (BYD CO LTD)
[A] 1-10
* 全文 *;
CN104484643 A 20150401 [X] (USTC UNIV SCIENCE TECH CN)
[X] 1-2
* 说明书第[0021]-[0044]段 *;
CN104778432 A 20150715 [A] (CTRIP COMP TECHNOLOGY SHANGHAI CO LTD)
[A] 1-10
* 全文 *

CNOI - G06K9/2072 ; G06K9/344 ; G06K9/36 ; G06K9/40 ; G06K9/46 ; G06K9/6267

CNOA - G06K2009/363 ; G06K2209/01

PA - HANGZHOU QIANJINDING ZHUOZHU INFORMATION TECH CO LTD

TI - Form data automatic recording method for management system of building engineering materials

AB - The invention relates to a form data automatic recording method for the management system of building engineering materials, wherein the method solves defects in the prior art. According to the technical scheme of the invention, the method comprises the steps of 1, visiting the management system of building engineering materials, and uploading well scanned table pictures to the management system of building engineering materials; 2, sequentially subjecting table pictures to the ashing sub-step, the binarization sub-step and the automatic tilt correction processing sub-step through a picture processing module; 3, further positioning and extracting characters in the table cells of a table through a table processing module; 4, subjecting the characters to segmentation, feature extraction and **pattern classification**through an **OCR** module; 5, typing the well classified information into the management system of building engineering materials. Based on the method, the good picture processing and the good table processing are realized, so that the character information is provided for subsequent feature extraction and feature **classification**, wherein the character information is complete, reliable and free of noise interference as much as possible.

2/13 © EPODOC / EPO

PN - US9424533 B1 20160823

PR - US201614986673 20160102; US201514847916 20150908; US201514746815 20150622; US201161538824P 20110924

AP - US201614986673 20160102

DT - **

CT - || STSE (B1)
US2009281906 A1 20091112 [ ] (CAI RUI [CN], et al)

CTNP - || STSE (B1)

[ ] - The Concept of a Z-Number-A New Direction in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley IRI 2011 Aug. 3, 2011 Las Vegas.
[ ] - Computing with Words-A Paradigm Shift Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley Feb. 10, 2010 Electrical Engineering Computer Science Colloquium UC Berkeley.
[ ] - A Note on Z-numbers Lotfi A. Zadeh 1 Department of EECS, University of California, Berkeley, CA 94720-1776, United States.
[ ] - The Concept of a Z-Number-Toward a Higher Level of Generality in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley.

CCI - **G05B13/0275** ; **G06N7/02**

CUI - **G06F17/274** ; **G06F17/28** ; **G06N5/046** ; **G06N7/005** ; **G06N99/005** ; **G06K9/4609** ; **G06K9/52** ; **G06K9/6267** ; **G06T7/12**

CUA - **G06F17/30985** ; **G06N5/02** ; **G06N5/047**

PA - ZADEH LOTFI A [US]; Z ADVANCED COMPUTING INC [US]

TI - Method and system for predicting an outcome of an event

AB - Specification covers new algorithms, methods, and systems for artificial intelligence, soft computing, and deep learning/recognition, e.g., image recognition (e.g., for action, gesture, emotion, expression, biometrics, fingerprint, facial, **OCR** (text), background, relationship, position, **pattern**, and object), large number of images ("Big Data") analytics, machine learning, training schemes, crowd-sourcing (using experts or humans), feature space, clustering, **classification**, similarity measures, optimization, search engine, ranking, question-answering system, soft (fuzzy or unsharp) boundaries/impreciseness/ambiguities/fuzziness in language, Natural Language Processing (NLP), Computing-with-Words (CWW), parsing, machine translation, sound and speech recognition, video search and analysis (e.g. tracking), image annotation, geometrical abstraction, image correction, semantic web, context analysis, data reliability (e.g., using Z-number (e.g., "About 45 minutes; Very sure")), rules engine, control system, autonomous vehicle, self-diagnosis and self-repair robots, system diagnosis, medical diagnosis, biomedicine, data mining, event prediction, financial forecasting, economics, risk assessment, e-mail management, database management, indexing and join operation, memory management, and data compression.

3/13 © EPODOC / EPO

PN - **US9262688** B1 20160216

PR - US201514847916 20150908; US201514746815 20150622; US201514612250 20150202; US201161538824P 20110924

AP - US201514847916 20150908

DT - **

CT - || STSE (B1)
US2009281906 A1 20091112 [ ] (CAI RUI [CN], et al)

CTNP - || STSE (B1)
[ ] - The Concept of a Z-Number-A New Direction in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley IRI 2011 Aug. 3, 2011 Las Vegas.
[ ] - Computing with Words-A Paradigm Shift Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley Feb. 10, 2010 Electrical Engineering Computer Science Colloquium UC Berkeley.

[ ] - A Note on Z-numbers Lotfi A. Zadeh ,1 Department of EECS, University of California, Berkeley, CA 94720-1776, United States.
[ ] - The Concept of a Z-Number-Toward a Higher Level of Generality in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley.
[ ] - Music Emotion Classification: A Fuzzy Approach-2006-Yi-Hsuan Yang, Chia-Chu Liu, and Homer H. Chen Graduate Institute of Communication Engineering, National Taiwan University 1 Roosevelt Rd. Sec.4, Taipei, 10617, Taiwan R.O.C. 886-2-3366-3549 b91901109@ntu.edu.tw, b90901034@ntu.edu.tw, homer@cc.ee.ntu.edu.tw.

CCI - G05B13/0275 ; G06N7/02

CUI - G06F17/274 ; G06F17/28 ; G06N5/046 ; G06N7/005 ; G06N99/005 ; G06K9/4609 ; G06K9/52 ; G06K9/6267 ; G06T7/12

CUA - G06F17/30985 ; G06N5/02 ; G06N5/047

PA - ZADEH LOTFI A [US]; ADVANCED COMPUTING INC Z [US]

TI - Method and system for analyzing and recognition of an emotion or expression from multimedia, text, or sound track

AB - Specification covers new algorithms, methods, and systems for artificial intelligence, soft computing, and deep learning/recognition, e.g., image recognition (e.g., for action, gesture, emotion, expression, biometrics, fingerprint, facial, **OCR** (text), background, relationship, position, **pattern**, and object), large number of images ("Big Data") analytics, machine learning, training schemes, crowd-sourcing (using experts or humans), feature space, clustering, **classification**, similarity measures, optimization, search engine, ranking, question-answering system, soft (fuzzy or unsharp) boundaries/impreciseness/ambiguities/fuzziness in language, Natural Language Processing (NLP), Computing-with-Words (CWW), parsing, machine translation, sound and speech recognition, video search and analysis (e.g. tracking), image annotation, geometrical abstraction, image correction, semantic web, context analysis, data reliability (e.g., using Z-number (e.g., "About 45 minutes; Very sure")), rules engine, control system, autonomous vehicle, self-diagnosis and self-repair robots, system diagnosis, medical diagnosis, biomedicine, data mining, event prediction, financial forecasting, economics, risk assessment, e-mail management, database management, indexing and join operation, memory management, and data compression.

4/13 © EPODOC / EPO

PN - US2015310301 A1 20151029

PNFP - US9171261 B1 20151027

PR - US201514746815 20150622; US201514612250 20150202; US201414201974 20140310; US201313953047 20130729; US201213621135 20120915; US201161538824P 20110924

AP - US201514746815 20150622

DT - **

CTNP - || STSE (B1)
[ ] - The Concept of a Z-Number-Toward a Higher Level of Generality in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley.
[ ] - A Note on Z-numbers Lotfi A. Zadeh ,1 Department of EECS, University of California, Berkeley, CA 94720-1776United States.
[ ] - The Concept of a Z-Number-A New Direction in Uncertain Computation Lotfi A.

Zadeh Computer Science Division Department of EECS UC Berkeley IRI 2011 Aug 32011 Las Vegas.
[ ] - Computing with Words-A Paradigm Shift Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley Feb. 102010 Electrical Engineering Computer Science Colloquium UC Berkeley.

CCI - G05B13/0275 ; G06N7/02

CUI - G06F17/274 ; G06F17/28 ; G06N5/046 ; G06N7/005 ; G06N99/005 ; G06K9/4609 ; G06K9/52 ; G06K9/6267 ; G06T7/12

CUA - G06F17/30985 ; G06N5/02 ; G06N5/047

PA - (A1)
ZADEH LOTFI A [US]
- (B1)
ZADEH LOTFI A [US]; ADVANCED COMPUTING INC Z [US]

TI - (A1 B1)
Analyzing or resolving ambiguities in an image for object or **pattern** recognition

AB - (A1 B1)
Specification covers new algorithms, methods, and systems for artificial intelligence, soft computing, and deep learning/recognition, e.g., image recognition (e.g., for action, gesture, emotion, expression, biometrics, fingerprint, facial, **OCR** (text), background, relationship, position, **pattern**, and object), large number of images ("Big Data") analytics, machine learning, training schemes, crowd-sourcing (using experts or humans), feature space, clustering, **classification**, similarity measures, optimization, search engine, ranking, question-answering system, soft (fuzzy or unsharp) boundaries/impreciseness/ambiguities/fuzziness in language, Natural Language Processing (NLP), Computing-with-Words (CWW), parsing, machine translation, sound and speech recognition, video search and analysis (e.g. tracking), image annotation, geometrical abstraction, image correction, semantic web, context analysis, data reliability (e.g., using Z-number (e.g., "About 45 minutes; Very sure")), rules engine, control system, autonomous vehicle, self-diagnosis and self-repair robots, system diagnosis, medical diagnosis, biomedicine, data mining, event prediction, financial forecasting, economics, risk assessment, e-mail management, database management, indexing and join operation, memory management, and data compression.

5/13 © EPODOC / EPO

PN - US2015149155 A1 20150528

PNFP - US9063930 B2 20150623

PR - US201514612250 20150202; US201414201974 20140310; US201313953047 20130729; US201213621135 20120915; US201161538824P 20110924

AP - US201514612250 20150202

DT - **

CTNP - || STSE (B2)
[ ] - The Concept of a Z-Number-Toward a Higher Level of Generality in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley.
[ ] - A Note on Z-numbers Lotfi A. Zadeh ,1 Department of EECS, University of California, Berkeley, CA 94720-1776, United States.
[ ] - The Concept of a Z-Number-A New Direction in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley IRI Aug. 3, 2011 Las Vegas.

[ ] - Computing with Words-A Paradigm Shift Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley Feb. 10, 2010 Electrical Engineering Computer Science Colloquium UC Berkeley.

CCI - G05B13/0275 ; G06N7/02

CUI - G06F17/274 ; G06F17/28 ; G06N5/046 ; G06N7/005 ; G06N99/005 ; G06K9/4609 ; G06K9/52 ; G06K9/6267 ; G06T7/12

CUA - G06F17/30985 ; G06N5/02 ; G06N5/047

PA - (A1)
ZADEH LOTFI A [US]
- (B2)
ZADEH LOTFI A [US]; ADVANCED COMPUTING INC Z [US]

TI - (A1)
Methods and Systems for Applications for Z-numbers
- (B2)
Method and system for analyzing or resolving ambiguities in image recognition for gesture, emotion, or expression recognition for a human

AB - (A1 B2)
Specification covers new algorithms, methods, and systems for artificial intelligence, soft computing, and deep learning/recognition, e.g., image recognition (e.g., for action, gesture, emotion, expression, biometrics, fingerprint, facial, **OCR** (text), background, relationship, position, **pattern**, and object), large number of images ("Big Data") analytics, machine learning, training schemes, crowd-sourcing (using experts or humans), feature space, clustering, **classification**, similarity measures, optimization, search engine, ranking, question-answering system, soft (fuzzy or unsharp) boundaries/impreciseness/ambiguities/fuzziness in language, Natural Language Processing (NLP), Computing-with-Words (CWW), parsing, machine translation, sound and speech recognition, video search and analysis (e.g. tracking), image annotation, geometrical abstraction, image correction, semantic web, context analysis, data reliability (e.g., using Z-number (e.g., "About 45 minutes; Very sure")), rules engine, control system, autonomous vehicle, self-diagnosis and self-repair robots, system diagnosis, medical diagnosis, biomedicine, data mining, event prediction, financial forecasting, economics, risk assessment, e-mail management, database management, indexing and join operation, memory management, and data compression.

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PN - US2014201126 A1 20140717

PR - US201414218923 20140318; US201313781303 20130228; US201414201974 20140310; US201313953047 20130729; US201213621135 20120915; US201361802810P 20130318; US201361832816P 20130608; US201361864633P 20130811; US201361871860P 20130829; US201261701789P 20120917

AP - US201414218923 20140318

DT - *; Rep

CT - || R141 (A1)
US5212730 A 19930518 [ ] (WHEATLEY BARBARA J [US], et al);
US2009276263 A1 20091105 [ ] (DEB BRIJESH [IN], et al);
US2012057779 A1 20120308 [ ] (EL DOKOR TAREK [US]);
US2012150626 A1 20120614 [ ] (ZHANG RUOFEI BRUCE [US], et al);
US9031844 B2 20150512 [ ] (YU DONG [US], et al);

US2012065976 A1 20120315 [ ] (DENG LI [US], et al)

CCI - G06K9/627

CUI - G06N7/005

PA - ZADEH LOTFI A [US]; TADAYON SAIED [US]; TADAYON BIJAN [US]

TI - Methods and Systems for Applications for Z-numbers

AB - Specification covers new algorithms, methods, and systems for artificial intelligence, soft computing, and deep learning/recognition, e.g., image recognition (e.g., for action, gesture, emotion, expression, biometrics, fingerprint, facial, **OCR** (text), background, relationship, position, **pattern**, and object), Big Data analytics, machine learning, training schemes, crowd-sourcing (experts), feature space, clustering, **classification**, SVM, similarity measures, modified Boltzmann Machines, optimization, search engine, ranking, question-answering system, soft (fuzzy or unsharp) boundaries/impreciseness/ambiguities/fuzziness in language, Natural Language Processing (NLP), Computing-with-Words (CWW), parsing, machine translation, sound and speech recognition, video search and analysis (e.g. tracking), image annotation, geometrical abstraction, image correction, semantic web, context analysis, data reliability, Z-number, Z-Web, Z-factor, rules engine, control system, autonomous vehicle, self-diagnosis and self-repair robots, system diagnosis, medical diagnosis, biomedicine, data mining, event prediction, financial forecasting, economics, risk assessment, e-mail management, database management, indexing and join operation, memory management, data compression, event-centric social network, Image Ad Network.

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PN - US2014188462 A1 20140703

PNFP - US8949170 B2 20150203

PR - US201414201974 20140310; US201313953047 20130729; US201213621135 20120915; US201161538824P 20110924

AP - US201414201974 20140310

DT - **

CTNP - || STSE (B2)
[ ] - The Concept of a Z-Number-Toward a Higher Level of Generality in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley.
[ ] - A Note on Z-numbers Lotfi A. Zadeh *, 1 Department of EECS, University of California, Berkeley, CA 94720-1776, United States.
[ ] - The Concept of a Z-Number-A New Direction in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley IRI 2011 Aug. 3, 2011 Las Vegas.
[ ] - Computing with Words-A Paradigm Shift-Lotfi A. Zadeh Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley Feb. 10, 2010 Electrical Engineering Computer Science Colloquium UC Berkeley.

CCI - G05B13/0275 ; G06N7/02

CUI - G06F17/274 ; G06F17/28 ; G06N5/046 ; G06N7/005 ; G06N99/005 ; G06K9/4609 ; G06K9/52 ; G06K9/6267 ; G06T7/12

CUA - G06F17/30985 ; G06N5/02 ; G06N5/047

PA - (A1)
ZADEH LOTFI A [US]
- (B2)
ZADEH LOTFI A [US]; ADVANCED COMPUTING INC Z [US]

TI - (A1)
Methods and Systems for Applications for Z-numbers
- (B2)
System and method for analyzing ambiguities in language for natural language processing

AB - (A1 B2)
Specification covers new algorithms, methods, and systems for artificial intelligence, soft computing, and deep learning/recognition, e.g., image recognition (e.g., for action, gesture, emotion, expression, biometrics, fingerprint, facial, **OCR** (text), background, relationship, position, **pattern**, and object), large number of images ("Big Data") analytics, machine learning, training schemes, crowd-sourcing (using experts or humans), feature space, clustering, **classification**, similarity measures, optimization, search engine, ranking, question-answering system, soft (fuzzy or unsharp) boundaries/impreciseness/ambiguities/fuzziness in language, Natural Language Processing (NLP), Computing-with-Words (CWW), parsing, machine translation, sound and speech recognition, video search and analysis (e.g. tracking), image annotation, geometrical abstraction, image correction, semantic web, context analysis, data reliability (e.g., using Z-number (e.g., "About 45 minutes; Very sure")), rules engine, control system, autonomous vehicle, self-diagnosis and self-repair robots, system diagnosis, medical diagnosis, biomedicine, data mining, event prediction, financial forecasting, economics, risk assessment, e-mail management, database management, indexing and join operation, memory management, and data compression.

8/13 © EPODOC / EPO

PN - US2013330008 A1 20131212

PNFP - US8694459 B2 20140408

PR - US201313953047 20130729; US201213621135 20120915; US201213621164 20120915; US201213423758 20120319; US201161538824P 20110924

AP - US201313953047 20130729

DT - **

CTNP - || R141 (A1)
[ ] - THE CONCEPT OF A Z-NUMBER-TOWARD A HIGHER LEVEL OF GENERALITY IN UNCERTAIN COMPUTATION Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley
[ ] - A Note on Z-numbers Lotfi A. Zadeh ⇑,1 Department of EECS, University of California, Berkeley, CA 94720-1776, United States
[ ] - THE CONCEPT OF A Z-NUMBER-A NEW DIRECTION IN UNCERTAIN COMPUTATION Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley IRI 2011 Aug 3, 2011 Las Vegas
- || STSE (B2)
[ ] - The Concept of A Z-Number-Toward a Higher Level of Generality in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley.
[ ] - A Note on Z-numbers Lotfi A. Zadeh , 1 Department of EECS, University of California, Berkeley, CA 94720-1776, United States.
[ ] - The Concept of A Z-Number-A New Direction in Uncertain Computation Lotfi A. Zadeh Computer Science Division Department of EECS UC Berkeley IRI 2011 Aug 3, 2011 Las Vegas.

CCI - G05B13/0275 ; G06N7/02

CUI - G06F17/274 ; G06F17/28 ; G06N5/046 ; G06N7/005 ; G06N99/005 ; G06K9/4609 ;

G06K9/52 ; G06K9/6267 ; G06T7/12

CUA - G06F17/30985 ; G06N5/02 ; G06N5/047

PA - (A1)
ZADEH LOTFI A [US]
- (B2)
ZADEH LOTFI A [US]; ADVANCED COMPUTING INC Z [US]

TI - (A1)
Methods and Systems for Applications for Z-numbers
- (B2)
System and method for image recognition and matching for targeted advertisement

AB - (A1)
The current specification covers various new algorithms, methods, and systems for, e.g., image recognition (e.g., for action, gesture, emotion, expression, biometrics, fingerprint, facial, **OCR** (text recognition), background, relationship, position, **pattern**, and object), machine learning, training schemes, feature space, clustering, **classification**, similarity measures, optimization, search engine, ranking, question-answering system, soft (fuzzy or unsharp) boundaries/impreciseness/fuzziness in language, clustering, and recognition, Natural Language Processing (NLP), Computing with Words (CWW), parsing, machine translation, sound and speech recognition, video search and analysis (e.g. tracking), image annotation, geometrical abstraction, image correction, semantic web, context analysis, data reliability (e.g., using Z-number (e.g., "About 45 minutes; Very sure")), rules engine, control system, autonomous vehicle, system diagnosis, medical diagnosis, biomedicine, large number of images analytics, event prediction, financial forecasting, economics, risk assessment, e-mail management, database management, indexing and join operation, memory management, data compression, and crowd-sourcing (using experts or humans).
- (B2)
The current specification covers various new algorithms, methods, and systems for, e.g., image recognition (e.g., for action, gesture, emotion, expression, biometrics, fingerprint, facial, **OCR** (text recognition), background, relationship, position, **pattern**, and object), machine learning, training schemes, feature space, clustering, **classification**, similarity measures, optimization, search engine, ranking, question-answering system, soft (fuzzy or unsharp) boundaries/impreciseness/fuzziness in language, clustering, and recognition, Natural Language Processing (NLP), Computing with Words (CWW), parsing, machine translation, sound and speech recognition, video search and analysis (e.g. tracking), image annotation, geometrical abstraction, image correction, semantic web, context analysis, data reliability (e.g., using Z-number (e.g., “About 45 minutes; Very sure”)), rules engine, control system, autonomous vehicle, system diagnosis, medical diagnosis, biomedicine, large number of images analytics, event prediction, financial forecasting, economics, risk assessment, e-mail management, database management, indexing and join operation, memory management, data compression, and crowd-sourcing (using experts or humans).

9/13 © EPODOC / EPO

PN - US2013039591 A1 20130214

PNFP - US8463054 B2 20130611

PR - US201213442192 20120409; US201213427062 20120322; US201161522274P

20110811

AP - US201213442192 20120409

DT - **

CT - || STSE (B2)
US3634822 A 19720111 [ ] (IBM)
US4010446 A 19770301 [ ] (RICOH KK)
US4499596 A 19850212 [ ] (IBM [US])
US4831657 A 19890516 [ ] (IBM [US])
US4989258 A 19910129 [ ] (IBM [US])
US5394484 A 19950228 [ ] (IBM [US])
US5745600 A 19980428 [ ] (XEROX CORP [US])
US5778092 A 19980707 [ ] (XEROX CORP [US])
US6269353 B1 20010731 [ ] (SETHI ISHWAR K [US], et al)
US7031948 B2 20060418 [ ] (LEE SHIH-JONG J [US])
US2008273807 A1 20081106 [ ] (IRIS SA [BE])

CTNP - || STSE (B2)
[ ] Wang et al. (Aug. 1995) "A multi-layer classifier for recognition of unconstrained handwritten numerals." Proc. 3rd IEEE Int'l Conf. on Document Analysis and Recognition, vol. 2 pp. 849-852
[ ] Xu et al. (Jul. 2009) "A hierarchical classification model for document categorization." Proc. 10th IEEE Int'l Conf. on Document Analysis and Recognition, pp. 486-490
[ ] Safavian et al. (Jun. 1991) "A survey of decision tree classifier methodology." IEEE Trans. on Systems, Man, and Cybernetics, vol. 21 No. 3, pp. 660-674

[ ] Blue et al. (Oct. 1993) "Evaluation of pattern classifiers for fingerprint and OCR applications." Pattern Recognition, vol. 27 No. 4, pp. 485-501

[ ] Ripley, B.D. (1996) Pattern Recognition and Neural Networks. Cambridge University Press

[ ] Serra et al., Eds. (1994) Mathematical morphology and its applications to image processing. Kluwer Academic Publishers

- || R141 (A1)
[ ] Serra et al., Eds. (1994) Mathematical morphology and its applications to image processing. Kluwer Academic Publishers

CCI - **G06K9/44** ; **G06K9/6282**

CCA - **G06K2209/01**

PA - (A1)
IRIS SA [BE]; DE MUELENAERE PIERRE [BE]; DAUW MICHEL [BE]; DUPONT OLIVIER [BE]; VERLEYSEN PATRICK [BE]

- (B2)
DE MUELENAERE PIERRE [BE]; DAUW MICHEL [BE]; DUPONT OLIVIER [BE]; VERLEYSEN PATRICK [BE]; IRIS SA [BE]

TI - (A1)
PATTERN RECOGNITION PROCESS, COMPUTER PROGRAM PRODUCT AND MOBILE TERMINAL

- (B2)
Hierarchical **OCR** using decision tree and nonparametric classifier

AB - (A1)
Pattern recognition process that includes, starting from an input **pattern**: normalization of the input **pattern** into a

normalized **pattern** of predetermined size; generation of a reliable **pattern** from the normalized **pattern** by using at least one morphological operator; calculation of a distance between the reliable **pattern** and selected templates which are selected from a template library; **classification**of the reliable patterns into at least one of the classes of the selected templates by means of at least one non-parametric **classification** method, which uses the classes of the selected templates and the calculated distances as inputs and outputs identified classes along with confidence levels.

- (B2)
A **pattern** recognition process, a non-transitory computer program product, and a mobile terminal for **pattern** recognition. An input **pattern** is normalized and a reliable **pattern** is generated from the normalized **pattern** by using at least one morphological operator. The distance between the reliable **pattern** and selected templates which are selected from a template library using a decision tree, is calculated. The reliable patterns are classified into at least one of the classes of the selected templates by at least one non-parametric **classification** method.

PN - US2012189194 A1 20120726
PNFP - US8885931 B2 20141111
PR - US201113013968 20110126
AP - US201113013968 20110126

DT - *; Rep

CT - || STSE (B2)

US4697178 A 19870929 [ ] (MEGATEK CORP [US])

US6195698 B1 20010227 [ ] (COMPAQ COMPUTER CORP [US])

US7533411 B2 20090512 [ ] (MICROSOFT CORP [US])

US7624277 B1 20091124 [ ] (MICROSOFT CORP [US])

US7653944 B2 20100126 [ ] (MICROSOFT CORP [US])

US7665131 B2 20100216 [ ] (MICROSOFT CORP [US])

US7725395 B2 20100525 [ ] (MICROSOFT CORP [US])

US7870609 B2 20110111 [ ] (MICROSOFT CORP [US])

US7891005 B1 20110215 [ ] (GOOGLE INC [US])

US7929805 B2 20110419 [ ] (PENN STATE RES FOUND [US])

US7945950 B2 20110517 [ ] (MICROSOFT CORP [US])

US8019127 B2 20110913 [ ] (GEORGE MASON INTELLECTUAL PROP [US])

US8175394 B2 20120508 [ ] (VINCENT LUC [US], et al)

US8209741 B2 20120626 [ ] (ELSON JEREMY ERIC [US], et al)

US8214892 B2 20120703 [ ] (COHEN IRA [IL], et al)

US8296659 B1 20121023 [ ] (ANTYPAS III JOHN [US], et al)

US8332937 B1 20121211 [ ] (EGER DAVID THOMAS [US], et al)

US8353017 B2 20130108 [ ] (IBM [US], et al)

US8391771 B2 20130305 [ ] (GOODMAN JOSHUA T [US], et al)

US8392986 B1 20130305 [ ] (GOSSWEILER III RICHARD CARL [US], et al)

US8433916 B2 20130430 [ ] (KOHAVI RON [US], et al)

US8555353 B2 20131008 [ ] (VON AHN LUIS [US], et al)

US2003204569 A1 20031030 [ ] (ANDREWS MICHAEL R [US], et al)
US2005065802 A1 20050324 [ ] (MICROSOFT CORP [US])
US2005066201 A1 20050324 [ ] (GOODMAN JOSHUA T [US], et al)
US2007101010 A1 20070503 [ ] (MICROSOFT CORP [US])
US2007234423 A1 20071004 [ ] (MICROSOFT CORP [US])
US2008063276 A1 20080313 [ ] (VINCENT LUC [US], et al)
US2008127302 A1 20080529 [ ] (FUJI XEROX CO LTD [JP])
US2008147456 A1 20080619 [ ] (BRODER ANDREI ZARY [US], et al)
US2009006575 A1 20090101 [ ] (MICROSOFT CORP [US])
US2009076965 A1 20090319 [ ] (MICROSOFT CORP [US])
US2009083826 A1 20090326 [ ] (MICROSOFT CORP [US])
US2009113294 A1 20090430 [ ] (YAHOO INC [US])
US2009116736 A1 20090507 [ ] (COPANION INC [US])
US2009150983 A1 20090611 [ ] (INFOSYS TECHNOLOGIES LTD [IN])
US2010031330 A1 20100204 [ ] (UNIV CARNEGIE MELLON [US])
US2010037319 A1 20100211 [ ] (MICROSOFT CORP [US])
US2010082998 A1 20100401 [ ] (MICROSOFT CORP [US])
US2010095350 A1 20100415 [ ] (TOWSON UNIVERSITY [US])
US2010153275 A1 20100617 [ ] (PALO ALTO RES CT INC [US])
US2010162357 A1 20100624 [ ] (MICROSOFT CORP [US])
US2011072498 A1 20110324 [ ] (MICROSOFT CORP [US])
US2011113147 A1 20110512 [ ] (MICROSOFT CORP [US])
US2011209076 A1 20110825 [ ] (INFOSYS TECHNOLOGIES LTD [IN])
US2011314537 A1 20111222

[ ] (HULTEN GEOFFREY J [US], et al)
US2011314540 A1 20111222 [ ] (POLURI RAVI KIRAN R [US], et al)
US2012154434 A1 20120621 [ ] (COSTEA MIHAI [US], et al)
US2012189194 A1 20120726 [ ] (SRIVASTAVA KUMAR S [US], et al)
US2012222101 A1 20120830 [ ] (IWASAKI MANABU [JP], et al)
US2012254964 A1 20121004 [ ] (KUMAR R SRAVAN [IN], et al)

- || R141 (A1)
US2010037319 A1 [ ];
US2003204569 A1 [ ];
US2007234423 A1 [ ];
US2009150983 A1 [ ];
US7624277 B1 [ ];
US2011314540 A1 [ ];
US2011113147 A1 [ ];
US2010031330 A1 [ ];
US2012254964 A1 [ ];
US7929805 B2 [ ];
US4697178 A [ ];
US6195698 B1 [ ];
US2005065802 A1 [ ];
US2005066201 A1 [ ];
US2007101010 A1 [ ];
US2008063276 A1 [ ];
US2009006575 A1 [ ];
US2009083826 A1 [ ];
US2009076965 A1 [ ];
US7533411 B2 [ ];
US2009116736 A1 [ ];
US7653944 B2 [ ];
US7665131 B2 [ ];
US2010082998 A1 [ ];
US7725395 B2 [ ];
US2010162357 A1 [ ];
US2010153275 A1 [ ];
US7870609 B2 [ ];
US7891005 B1 [ ];
US2011072498 A1 [ ];
US7945950 B2 [ ];
US2011209076 A1 [ ];
US8019127 B2 [ ];
US2011314537 A1 [ ];
US8175394 B2 [ ];
US2012154434 A1 [ ];

US8209741 B2 [ ];
US8214892 B2 [ ];
US2012222101 A1 [ ];
US8296659 B1 [ ];
US8332937 B1 [ ];
US8392986 B1 [ ];
US8433916 B2 [ ];
US2008147456 A1 [ ];
US8555353 B2 [ ];
US2008127302 A1 [ ];
US8353017 B2 [ ];
US2010095350 A1 [ ];
US2009113294 A1 [ ];
US8391771 B2 [ ]

CTNP
- || STSE (B2)
[ ] Using Machine Learning to break Visual HIPs, Kumar Chellapilla 2004
[ ] An algorithm to analyze strength of CAPTCHA, Parbhane, India
[ ] Breaking a Visual Captcha, Mori et al. 2003
[ ] Computers beat Humans at Single Character Recognition in Reading Based HIP, Chellapilla 2005
- || R141 (A1)
[ ] Using Machine Learning to break Visual HIPs, Kumar Chellapilla 2004
[ ] An algorithm to analyze strength of CAPTCHA, Parbhane, India
[ ] Breaking a Visual Captcha, Mori et al. 2003
[ ] Computers beat Humans at Single Character Recognition in Reading Based HIP, Chellapilla 2005

CCI
- G06F21/316 ; G06F21/36 ; G06K9/6255

PA
- (A1 B2)
SRIVASTAVA KUMAR S [US];
MICROSOFT CORP [US]

TI
- (A1 B2)
MITIGATING USE OF MACHINE SOLVABLE HIPS

AB
- (A1 B2)
One or more techniques

and/or systems are disclosed for mitigating machine solvable human interactive proofs (HIPs). A classifier is trained over a set of one or more training HIPs that have known characteristics for **OCR** solvability and HIP solving **pattern** from actual use. A HIP **classification** is determined for a HIP (such as from a HIP library used by a HIP generator) using the trained classifier. If the HIP is classified by the trained classifier as a merely human solvable **classification**, such that it may not be solved by a machine, the HIP can be identified for use in the HIP generation system. Otherwise, the HIP can be altered to (attempt to) be merely human solvable.

TXT - captcha

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PN - CN102567725 A 20120711

PR - CN20111436948 20111223

AP - CN20111436948 20111223

DT - I

CT - || STSE (A)
CN101097600 A 20080102
[A] (FOUNDER GROUP [CN])
[A] 1-2
* 全文 *;
CN102024138 A 20110420
[YX] (FUJITSU LTD)
[Y] 2
* 说明书第[0009]-[0014]段 *
[X] 1;
US2003118235 A1 20030626
[A] (KIM KYE KYUNG [KR], et al)
[A] 1-2
* 全文 *

CTNP - || STSE (A)
[Y] - 王嵘等, "基于笔划合并的手写体信函地址汉字切分识别", 《清华大学学报》, (20040430), vol. 44, no. 4, pages 498 - 502
[Y] 2

* 第498页－第502页 *

PA - STATE GRID ELECTRIC POWER RES INST

TI - Soft segmentation method of financial **OCR** system handwritten numerical strings

AB - The invention discloses a soft segmentation method of financial **OCR** system handwritten numerical strings. Automatic recognition processing of financial paper realizes automatic input and rechecking of financial paper, seamlessly integrates the whole process of image processing, layout analysis and intelligent identification, and comprises automatic **classification**of financial paper images, image preprocessing of the financial paper, identification, supervision and checking of elements in the financial paper, and the like. **OCR** technology is the core part in a financial paper automatic recognition processing system, requires cutting connected character strings required for automatic processing of financial paper elements into single characters, and performing character recognition. The character recognizer at the present stage has high accuracy rate, so that the overall recognition rate of the **OCR** system depends on the accurate rate and the acceptability of character string segmentation. The method aims at solving the technical problem of a soft segmentation method for realizing connected numeric strings based on a fuzzy **pattern** recognition theory, so as to improve the

accurate rate of the integral segmentation flow and reduce the false rejection rate of the system, and improve the overall performance of the recognition system.

12/13 © EPODOC / EPO

PN - US5912986 A 19990615

PR - US19940361391 19941221; US19940263304 19940621

AP - US19940361391 19941221

DT - **

CT - || STSE (A)
US4918618 A 19900417 [ ] (ANALOGINTELLIGENCE CORP [US])
US4933977 A 19900612 [ ] (GLORY KOGYO KK [JP])
US5052043 A 19910924 [ ] (EASTMAN KODAK CO [US])
US5105468 A 19920414 [ ] (AT & T BELL LAB [US])
US5119438 A 19920602 [ ] (SHARP KK [JP])
US5131073 A 19920714 [ ] (RICOH KK [JP])
US5151951 A 19920929 [ ] (SHARP KK [JP])
US5155801 A 19921013 [ ] (HUGHES AIRCRAFT CO [US])
US5214746 A 19930525 [ ] (ORINCON CORP [US])
US5239593 A 19930824 [ ] (NYNEX SCIENCE & TECH INC [US])
US5245672 A 19930914 [ ] (US COMMERCE [US])
US5299269 A 19940329 [ ] (EASTMAN KODAK CO [US])
US5392594 A 19950228 [ ] (AIR PROD & CHEM [US])
US5465308 A 19951107 [ ] (DATRON TRANSOC INC [US])

CTNP - || STSE (A)
[ ] Barnett, Computational methods for a mathematical theory of evidence, 1981, pp. 868 875
[ ] J.A. Barnett,

Computational Methods for a Mathematical
Theory of Evidence , Proceedings of the Seventh
International Joint Conferences on Artificial Intelligence,
Vancouver, British Columbia, 1981, pp. 868 875
[ ] R. Battiti et al., Democracy in Neural Nets: Voting Schemes
for Classification , Neural Networks, vol. 7, No. 4, 1994,
pp. 691 707
[ ] Y. Bengion et al., Globally Trained Handwritten Word
Recognizer using Spatial Representation, Covolutional
Neural Netowrks and Hidden Markov Models , Proceedings of
1993 Confierence on Neural Information Processing Systems
Natural and Synthetic, Nov. 29 Dec. 2, 1993, Denver
Colorado, pp. 937 944
[ ] J. Bromely et al., Improving Rejection Performance on
Handwritten Digits by Training with Rubbish , Neural
Computation, vol. 5, 1993 (367 370)
[ ] J. Daugman, Complete Discrete 2 D Gabor Transforms by
Neural Networks for Image Analysis and Compression , IEEE
Transactions on Acoustics, Speech and Signal Processing,
1988, vol. 36, No. 7, pp. 1169 1179
[ ] J.A. Freeman et al., Neural Networks Algorithms,
Applications and Programming Techniques, pp. 89 125 (1991:
Addison Welsey Publishing Company, Inc.)

[ ] A. Gupta et al., An Integrated Architecture for Recognition of Totally Unconstrained Handwritten Numerals , International Journal of Pattern Recognition and Artificial Intelligence, 1993, vol. 7, No. 4, pp. 757 773

[ ] J. Keeler et al., A Self Organizing Integrated Segmentation and Recognition Neural Net , appears in J.E. Moody et al. (eds.), Advances in Neural Information Processing Systems, 1992, vol. 4, pp. 496 503 (Morgan Kaufmann Publishers, San Mateo, California)

[ ] G. Martin et al., Learning to See Where and What: Training a Net to Make Saccades and Recognize Handwritten Characters (1993), appears in S.J. Hanson et al. (eds.), Advances in Neural Information Processing Systems, vol. 5, pp. 441 447 (Morgan Kaufmann Publ., San Mateo, CA)

[ ] D.E. Rumelhart et al., Parallel Distributed Processing, vol. 1, pp. 328 330 (1988, MIT Press)

[ ] G. Shafer, A Mathematical Theory of Evidences, (1976: Princeton University Press), specifically pp. 3 78

[ ] A. Shustorovich, A Subspace Projection Approach to Feature Extraction: The Two Dimensional Gabor Transform for

Character Recognition appeared in Neural Networks, 1994,
vol. 7, No. 8
[ ] F.F. Soulie et al., Multi Modular Neural Network
Architectures: Applications in Optical Character and Human
Face Recognition , International Journal of Pattern
Recognition and Artificial Intelligence, vol. 7, No. 4,
1993, pp. 721 755, specifically pp. 728 729

CCI - **G06K9/32** ; **G06K9/344** ; **G06K9/4628** ; **G06K9/66**

CCA - **G06K2209/01**

PA - EASTMAN KODAK CO [US]

TI - Evidential confidence measure and rejection technique for use in a neural network based optical character recognition system

AB - Apparatus, and an accompanying method, for use in, e.g., a neural network-based optical character recognition (**OCR**) system (5) for accurately classifying each individual character extracted from a string of characters, and specifically for generating a highly reliable confidence measure that would be used in deciding whether to accept or reject each classified character. Specifically, a confidence measure, associated with each output of, e.g., a neural classifier (165), is generated through use of all the neural activation output values. Each individual neural activation output provides information for a corresponding atomic hypothesis of an evidence function. This hypothesis is

that a **pattern** belongs to a particular class. Each neural output is transformed (1650) through a pre-defined monotonic function into a degree of support in its associated evidence function. These degrees of support are then combined (1680, 1690) through an orthogonal sum to yield a single confidence measure associated with the specific **classification**then being produced by the neural classifier.

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PN - EP0689154 A2 19951227

PNFP - EP0689154 A3 19970611

PR - US19940263304 19940621; US19940361391 19941221

AP - EP19950201518 19950609

DT - *; Rep

CT - || STSE (A3)
XP000322021 A[X]

CTNP - || STSE (A3)
[X] KEIJI YAMADA, "A REJECTION FUNCTION FOR MULTILAYER NEURAL NETWORKS AND MULTIFONT ALPHANUMERIC RECOGNITION", NEC RESEARCH ANDDEVELOPMENT, (19930401), vol. 34, no. 2, pages 274 - 282, XP000322021
[X] 1-3,10-12
* chapter 3 *

CCI - G06K9/32 ; G06K9/344 ; G06K9/4628 ; G06K9/66

CCA - G06K2209/01

PA - (A2 A3)
EASTMAN KODAK CO [US]

TI - (A2 A3)
An evidential confidence measure and rejection technique for use in a neural network based optical character recognition system

AB - (A2)
Apparatus, and an accompanying method, for use in, e.g., a neural network-based optical character recognition (**OCR**) system (5) for accurately classifying each individual character extracted from a string of characters, and specifically for generating a highly reliable confidence measure that would be used in deciding whether to accept or reject each classified character. Specifically, a confidence measure, associated with each output of, e.g., a neural classifier (165), is generated through use of all the neural activation output values. Each individual neural activation output provides information for a corresponding atomic hypothesis of an evidence function. This hypothesis is that a **pattern** belongs to a particular class. Each neural output is transformed (1650) through a pre-defined monotonic function into a degree of support in its associated evidence function. These degrees of support are then combined (1680, 1690) through an orthogonal sum to yield a single confidence measure associated with the specific **classification**then being produced by the neural classifier. <IMAGE>

[SS 23]