

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 4

Output type: Journal article

Title:

Perceived colour differences in displayed colours, part 1: hard copy to soft copy matching

Journal title: Imaging Science Journal

Month/year of publication: March 2002

Pagination: 1-9

Volume: 50

ISSN: 1368-2199

DOI:

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors:

1: Jacobson, R.E.

External author: No

2: Pointer, M.R.

External author: Yes

Other relevant details:

This presented work was also carried out at the University under my supervision as part of a LINK Project supported by MAFF. Experimental methods were developed to enable an opaque uniformly coloured sample and an adjacent, equal-sized uniform area of a CRT faceplate to be compared by observers. Statistical analysis of the results showed that the average perceived difference in colour match, for every colour examined, was three bits with a standard deviation of 1 bit. The results gained are important in examining the reliability of observers of monitor images for assessing food colour for quality control purposes.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Black, S.

Category: A

FTE: 1.00

Identifier: 0710830060593

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type: Journal article**

Title:

Computing ripple effect for software maintenance

Journal title: Journal of Software Maintenance and Evolution

Month/year of publication: July 2001 **Pagination:** 263-279

Volume: 13(4)

ISSN: 1532-060X

URL: <http://dx.doi.org/10.1002/smr.233>

DOI: 10.1002/smr.233

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

Other relevant details:

This is the first journal publication looking at the ripple effect measure and software maintenance since the original papers by Yau and Collofello, the inventors of the measure. It currently has nine citations. Measurement of impact and stability are just starting to gain popularity as people realise that software systems are becoming larger and larger and we need some way of ensuring that they keep meeting their purpose.

Output number: 2 **Output type: Chapter in book**

Title:

The role of ripple effect in software evolution

Editors: Madhavji, Nazim H. and Fernández-Ramil, Juan C. and Perry, Dewayne E.

Book title: Software evolution and feedback: theory and practice

Publisher: John Wiley

Year of publication: 2006

Pagination: 249-267

ISBN: 0470871806

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

Other relevant details:

This work looks at how the ripple effect fits in with Lehman's fundamental Laws of software evolution, foundational research in this area coming to the conclusion that it fits very well and provides a means of measuring software evolution as defined by the laws.

Output number: 3 **Output type: Journal article**

Title:

Is ripple effect intuitive? A pilot study

Journal title: Innovations in Systems and Software Engineering

Month/year of publication: July 2006 **Pagination:** 88-98

Volume: 2(2)

ISSN: 1614-5046

URL: <http://dx.doi.org/10.1007/s11334-006-0004-x>

DOI: 10.1007/s11334-006-0004-x

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

Other relevant details:

This paper looks at whether the ripple effect metric captures any intuition from software developers about how much parts of their code might have an effect on other parts of their code. It shows that ripple effect is related to developers' intuition about change within software and could possibly thus be used by less experienced developers to help them when writing and maintaining software.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Bolotov, A.

Category: A

FTE: 1.00

Identifier: 9810660105644

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Journal article

Title:

A clausal resolution method for branching-time logic ECTL+

Journal title: Annals of Mathematics and Artificial Intelligence

Month/year of publication: March 2006 **Pagination:** 235-263

Volume: 46(3)

ISSN: 1012-2443

URL: <http://dx.doi.org/10.1007/s10472-006-9018-1>

DOI: 10.1007/s10472-006-9018-1

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Basukoski, A.

External author: No

Other relevant details:

Computation Tree Logic CTL is crucial in modelling complex distributed systems. A clausal resolution method developed for CTL in our earlier papers prompted several PhD programmes, has been already used by the research community, in modelling multi-agent systems, and its ideology was utilised in bounded model checking. This new paper gives a sound and complete resolution algorithm for a significantly richer logic, ECTL+. With no analogous methods and even a deductive technique for ECTL+ our approach can handle a new range of applications, in particular, the logical specification and resolution based verification of the behaviour of grid components.

Output number: 2

Output type: Journal article

Title:

On the relationship between w-automata and temporal logic normal forms

Journal title: Journal of Logic and Computation

Month/year of publication: August 2002 **Pagination:** 561-581

Volume: 12(4)

ISSN: 0955-792X

URL: <http://dx.doi.org/10.1093/logcom/12.4.561>

DOI: 10.1093/logcom/12.4.561

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Dixon, C.

External author: Yes

2: Fisher, M.

External author: Yes

Other relevant details:

In automata-based approach to analyse a system specification, its translation into the corresponding automaton is the most expensive step. This paper establishes the expressive equivalence between the temporal logic normal form used for temporal resolution and Buchi automata enabling a direct translation of specification into the normal form and application of the resolution based verification technique. This is useful when a system specification given in a high-level language, such as temporal logic, represents complex temporal properties, for example, properties of complex distributed system. Here generating an automaton can be especially costly, while generating a normal form is linear in complexity.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution

Title:

Automating natural deduction for linear-time temporal logic

Conference: Proceedings of the 14th International Symposium on Temporal Representation and Reasoning. TIME 2007

Month/year of publication: 28/06/2007 **Number of pages:** 47-58

Media of output:

ISSN: 9780769528366

URL: <http://doi.ieeecomputersociety.org/10.1109/TIME.2007.41>

DOI: 10.1109/TIME.2007.41

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Grigoriev, O.

External author: Yes

2: Shangin, V.

External author: Yes

Other relevant details:

Natural deduction, still underestimated, has been already applied in several areas such as agent systems, and even more surprisingly in the verification of security protocols. These applications require rich modal systems supplied with natural deduction, a challenging task, and its mechanisation, even a bigger challenge. This paper represents a significant step in a long-term project of building uniform natural deduction systems, giving a natural deduction proof searching algorithm for the linear time logic PLTL. With no analogous methods our technique has potential to expand to branching time enabling its applicability to reason about the behaviour protocols of complex distributed systems.

Output number: 4 **Output type:** Journal article

Title:

Clausal resolution in a logic of rational agency

Journal title: Artificial Intelligence: an international journal

Month/year of publication: July 2002 **Pagination:** 47-89

Volume: 139(1)

ISSN: 0004-3702

URL: [http://dx.doi.org/10.1016/S0004-3702\(02\)00196-0](http://dx.doi.org/10.1016/S0004-3702(02)00196-0)

DOI: 10.1016/S0004-3702(02)00196-0

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Dixon, C.

External author: Yes

2: Fisher, M.

External author: Yes

Other relevant details:

This paper presents a sound, complete and terminating clausal resolution method for a combination of branching-time and modal (belief) logics and is amenable to mechanisation. Targeting KARO agent framework and contributing to formal representation of rational agents this research was part of a wider work, the development of resolution based methods for a range of combined modal and temporal logics. Being first of this kind, it opened a prospect of relevant developments for similar combinations of logics - temporal and knowledge, temporal and deontic logics. The latter is useful in capturing conformity of computer systems behaviour to desired norms.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Chountas, P.

Category: A

FTE: 1.00

Identifier: 0110831772767

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Journal article

Title:

Representation of factual and temporal unawareness in electronic patient records

Journal title: Journal of Computational Methods in Sciences and Engineering

Month/year of publication: October 2005

Volume: 5(4)

Pagination: 243-261

ISSN: 1472-7978

URL: <http://iospress.metapress.com/openurl.asp?genre=article&issn=1472-7978&volume=5&issue=4&spage=243>

DOI:

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Additional authors: 0

Co-authors:

1: El-Darzi, E.

External author: No

2: Kodogiannis, V.

External author: No

3: Petrounias, I.

External author: Yes

Other relevant details:

This paper is dealing with the construction of an integrated repository for the representation needs of imprecise data often found in patient records. The novelty of this integrated repository is based on the accommodation of both value and temporal imprecision. The delivered post relational database environment can assist in discriminating erroneous information from patient records. It can be further used for accommodating different perceptions often coming from health care specialists regarding the status of a particular diagnosis or treatment. The paper contributes to the development of post relational database environments for the accommodation needs of indicative types of multi-source information.

Output number: 2

Output type: Conference contribution

Title:

Virtual integration of temporal and conflicting information

Conference: 2001 International Database Engineering & Applications Symposium: proceedings: 16-18 July, 2001, Grenoble, France

Month/year of publication: 16/07/2001

Number of pages: 243-248

Media of output:

ISSN: 0769511406

URL: <http://dx.doi.org/10.1109/IDEAS.2001.938091>

DOI: 10.1109/IDEAS.2001.938091

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Additional authors: 0

Co-authors:

1: Petrounias, I.

External author: Yes

Other relevant details:

This paper is dealing with the representation of definite, indefinite and recurring temporal data as part of a temporal database environment. Many time models have been proposed in temporal database bibliography, although often fail to come up with a single time representation for expressing different types of temporal data. A novell time model is put forward for the representation needs of definite, indefinite and recurring temporal data. Based on evidential reasoning a post relational query language is presented for the querying needs of a temporal database environment.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution
Title:
Representation and querying of temporal conflict
Conference: Flexible query answering systems: 5th International Conference, FQAS 2002, Copenhagen, Denmark, October 2002
Month/year of publication: 27/10/2002 **Number of pages:** 112-123
Media of output:
ISSN: 3540000747
URL: <http://www.springerlink.com/openurl.asp?genre=article&issn=0302-9743&volume=2522&spage=112>
Is duplicate: No **Is interdisciplinary:** No **Pending publication:** No
Research group:
Co-authors: **Additional authors:** 1
1: Atanassov, K.T. External author: Yes
2: Kodogiannis, K. External author: No
3: Petrounias, I. External author: Yes
Other relevant details:
This paper is dealing with the treatment of uncertainty and conflict as dual properties at the level of conceptual temporal schemas. Many models have been proposed in this topic, although often fail to represent the association between conflict and uncertainty when it comes to representation and querying of conflicting information. Based on conceptual modelling principles an architecture is presented for dealing with the representation of conflicting information spanned over the time. The level of abstraction and operations for conflict resolution is raised at the level of meta-data ensuring thus integration of conflicting information coming from multiple sources

Output number: 4 **Output type:** Chapter in book
Title:
Precise enterprises and imprecise data
Editors: Barzdins, Janis and Caplinskas, Albertas
Book title: Databases and information systems: Fourth International Baltic Workshop, Baltic DB&IS 2000, Vilnius, Lithuania, May 1-5, 2000
Publisher: Kluwer Academic Publishers
Year of publication: 2001 **Pagination:** 57-68
ISBN: 0792368231
Is duplicate: No **Is interdisciplinary:** No **Pending publication:** No
Research group:
Co-authors: **Additional authors:** 0
1: Petrounias, I. External author: Yes
Other relevant details:
This paper is dealing with the representation of factual and temporal imprecision based on Object Role Modelling and its mapping to a NF2 post relational data model. Many post-relational models have been proposed in this topic, although often the semantics of object role modelling are ignored, resulting thus in non realistic relational representation. The paper distinctly puts into context the issue of imprecision with respect to object role modelling-conceptual modelling and refines this important modelling issue in terms of querying answering systems.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Courtenage, S.A.

Category: A

FTE: 1.00

Identifier: 0010831707979

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Conference contribution

Title:

The design and implementation of a P2P-based composite event notification system

Conference: 20th International Conference on Advanced Information Networking and Applications (AINA 2006)

Month/year of publication: 18/04/2006 **Number of pages:** 701-706

Media of output:

ISSN: 0769524664

URL: <http://dx.doi.org/10.1109/AINA.2006.323>

DOI: 10.1109/AINA.2006.323

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Williams, S.

External author: No

Other relevant details:

Composite event notification systems have proven difficult to design and develop. Existing research prototypes of content-based event notification systems deal almost exclusively with simple events. This paper described the design and development of a composite event notification prototype using P2P technology. The significance of this work was that we described a full working content-based composite event notification prototype, which had not been done before.

Output number: 2

Output type: Conference contribution

Title:

Semantic-based matching and personalization in FWEB, a publish/subscribe-based web infrastructure

Conference: On the move to meaningful internet systems 2005: CoopIS, DOA, and ODBASE : OTM Confederated International Conferences CoopIS, DOA, and ODBASE 2005, Agia Napa, Cyprus, October 31-November 4, 2005

Month/year of publication: 31/10/2005 **Number of pages:** 385-401

Media of output:

ISSN: 9783540297369

URL: http://dx.doi.org/10.1007/11575771_25

DOI: 10.1007/11575771_25

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Williams, S.

External author: No

Other relevant details:

This paper described how event notification systems can be used to provide support for automatic hyperlink creation between web pages. This paper built on the work of the previous paper, but added the use of ontologies in matching between anchor requests and link responses. COOPIS is part of an annual conference series called OnTheMove (OTM) that conducts full peer review of papers (with 3 referees per paper).

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution

Title:

Automatic hyperlink creation using P2P and publish/subscribe

Conference: Professional Knowledge Management: Third Biennial Conference, WM 2005, Kaiserslautern, Germany, April 10-13, 2005

Month/year of publication: 10/04/2005 **Number of pages:** 224-233

Media of output:

ISSN: 9783540304654

URL: http://dx.doi.org/10.1007/11590019_26

DOI: 10.1007/11590019_26

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Williams, S.

External author: No

Additional authors: 0

Other relevant details:

Hyperlinks have to be manually created between web pages, which is a time-consuming and error-prone process. In this paper, we examined how creating hyperlinks between pages could be made automatic using a content-based event notification system, and by specifying pages and anchor tags in terms of keywords.

Output number: 4 **Output type:** Conference contribution

Title:

Specifying and detecting composite events in content-based publish/subscribe systems

Conference: 22nd International Conference on Distributed Computing Systems Workshops (ICDCSW '02)

Month/year of publication: 02/07/2002 **Number of pages:** 602-607

Media of output:

ISSN: 0769515886

URL: <http://dx.doi.org/10.1109/ICDCSW.2002.1030836>

DOI: 10.1109/ICDCSW.2002.1030836

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Other relevant details:

This paper described an approach to detecting composite events in distributed systems using the lambda calculus. One of the key problems concerning composite events is to do with how they are co-ordinated in a distributed system so that patterns can be detected. This paper proposed a formal approach to solving this problem, based on language syntax and semantics, rather than an ad-hoc approach.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Economou, D.

Category: A

FTE: 1.00

Identifier: 0610830054964

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Journal article

Title:

Problem driven CVE technology development

Journal title: Journal of Network and Computer Applications

Month/year of publication: October 2002 **Pagination:** 243-262

Volume: 25(4)

ISSN: 1084-8045

URL: <http://dx.doi.org/10.1006/jnca.2002.0141>

DOI: 10.1006/jnca.2002.0141

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Mitchell, W.L.

External author: Yes

2: Pettifer, S.R.

External author: Yes

Other relevant details:

Collaborative Virtual Environments (CVE) was a discipline that advanced mainly by focusing on solving technical issues in areas such as graphics, networking etc., rather than issues deriving from "real life" application domains such as facilitating human communication, interaction and collaboration. The originality of this paper lays in the proposition of a methodology that uses CVE technology to address genuine application problems. The methodology has driven the development of the Deva CVE system a widely referenced CVE system developed in the UK by the Advanced Interfaces Group, Manchester University.

Output number: 2

Output type: Journal article

Title:

The technology landscape of wireless web

Journal title: International Journal of Mobile Communications

Month/year of publication: September 2005 **Pagination:** 508-527

Volume: 5(5)

ISSN: 1470-949X

URL: <http://dx.doi.org/10.1504/IJMC.2007.013930>

DOI: 10.1504/IJMC.2007.013930

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Gavalas, D.

External author: Yes

Other relevant details:

This article represents an original comprehensive review of the main technological, architectural and business issues related to the current state-of-the-art wireless web technologies: WAP, i-mode and J2ME. The rigour of the article lies in the presentation a critical analysis of the main assets and weaknesses of these technologies as well as their current status and the trends that will affect their market share and customer base in the foreseeable future.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Journal article
Title:

Multimedia applications for mobile devices: issues and requirements for authoring tools and development platforms

Journal title: Journal of Mobile Multimedia

Month/year of publication: March 2007 **Pagination:** 65-87

Volume: 3(1)

ISSN: 1550-4646

DOI:

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Gavalas, D.

External author: Yes

2: Kenteris, M.

External author: Yes

3: Micha, K.

External author: Yes

Other relevant details:

The originality of this paper lays in the proposition of ways that mobile devices development platforms and authoring tools should be exploited for building operational and profitable cultural and tourist multimedia applications satisfying user, application and designer requirements. The paper outcome derives by a thorough evaluation of the development and design facilities provided by state-of-the-art multimedia application development tools for PDAs and mobile phones that have been used in the implementation phase of two case studies.

Output number: 4 **Output type:** Conference contribution
Title:

User centred virtual actor technology

Conference: VAST '01: Proceedings of the 2001 Conference on Virtual Reality, Archeology, and Cultural Heritage, Glyfada, Greece, 28-30 Nov 2001

Month/year of publication: 28/11/2001 **Number of pages:** 323-332

Media of output:

ISSN: 1581134479

URL: <http://doi.acm.org/10.1145/584993.585052>

DOI: 10.1145/584993.585052

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 1

1: Cook, J.

External author: Yes

2: Mitchell, W.L.

External author: Yes

3: Pettifer, S.R.

External author: Yes

Other relevant details:

Virtual Actors (VAs), research has focused on: support for conversational interaction; facial expressions and tracking; body language; navigation; and 'believability' in terms of a VA's knowledge and intelligence. While, the problem of producing autonomous VAs relies also on modelling human behaviour. This paper suggests a set of design guidelines, that derived by the application of a user centred approach for developing VAs, that address "real" application and user requirements. The guidelines have been used to guide the implementation of VAs using the Deva CVE system a widely referenced CVE system developed in the UK.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: El-Darzi, E.G.

Category: A

FTE: 1.00

Identifier: 8910831300742

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Journal article

Title:

Length of stay-based patient flow models: recent developments and future directions

Journal title: Health Care Management Science

Month/year of publication: August 2005 **Pagination:** 213-220

Volume: 8(3)

ISSN: 1386-9620

URL: <http://dx.doi.org/10.1007/s10729-005-2012-z>

DOI: 10.1007/s10729-005-2012-z

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Marshall, A.H.

External author: Yes

2: Vasilakis, C.

External author: No

Other relevant details:

The paper provides a critical review of the length of stay based modelling techniques of Markov models, phase type distributions compartmental and simulation models for investigating the multi phase nature of the patient flow. We argue that a multi phase approach is the most suited methodology for measuring and planning hospital activities related to patient flow. Besides offering simplicity for understanding and modelling purposes it captures the reality of different phases of patients' journeys through health care facilities.

Output number: 2

Output type: Conference contribution

Title:

Extending the Gaia methodology for the design and development of agent-based software systems

Conference: Proceedings of the 31st IEEE International Computer Software and Applications Conference (COMPSAC 2007), vol. 2

Month/year of publication: 24/07/2007 **Number of pages:** 159-168

Media of output:

ISSN:

URL: <http://dx.doi.org/10.1109/COMPSAC.2007.114>

DOI: 10.1109/COMPSAC.2007.114

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors:

1: Huang, W.

External author: No

2: Jin, L.

External author: No

Other relevant details:

The paper concentrates on an agent-oriented methodology for the analysis and design of agent-based systems and for supporting both levels of "agent structure" and "agent society" in the agent-oriented software design and development process. A leading methodology (Gaia) is first considered and then extended by the creation of innovative design tools which aimed at better supporting applications in real-world domains. The agent-oriented methodology and AUML approaches are then compared and evaluated in terms of their strengths, weaknesses and their effectiveness in improving agents and their productivity potential.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution

Title:

An analysis of missing data treatment methods and their application to health care dataset

Conference: Advanced Data Mining and Applications: First International Conference, ADMA 2005, Wuhan, China, July 22-24, 2005

Month/year of publication: 22/07/2005 **Number of pages:** 583-590

Media of output:

ISSN: 354027894X

URL: http://dx.doi.org/10.1007/11527503_69

DOI: 10.1007/11527503_69

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Lei, L.

External author: Yes

2: Liu, P.

External author: Yes

3: Vasilakis, C.

External author: No

Additional authors: 2

Other relevant details:

The paper performs an extensive experiment to evaluate most common data mining techniques for treating missing data and proposes a new algorithm based on Naïve Bayesian classifier and information gain. First we test these methods using various benchmarking data sets from UCI. Second we evaluate the effectiveness of these models on a health care data set with many missing values in order to predict the inpatient length of stay in different phases of care. Our proposed model compares well with C4.5, decision tree, internal model.

Output number: 4 **Output type:** Conference contribution

Title:

On uncertainty and data-warehouse design

Conference: Advances in Information Systems: Third International Conference, ADVIS 2004, Izmir, Turkey, October 20-22, 2004

Month/year of publication: 20/10/2004 **Number of pages:** 4-13

Media of output:

ISSN: 3540234780

DOI: 10.1007/b101594

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Chountas, P.

External author: No

2: Petrounias, I.

External author: Yes

3: Vasilakis, C.

External author: No

Additional authors: 3

Other relevant details:

This paper is dealing with the representation of evolving hierarchies as part of a temporal data warehouse environment. Many temporal data warehouse models have been proposed in temporal database bibliography; however, they often fail to come up with a real time representation of changing hierarchies. A novel data warehousing model is put forward for the representation needs of evolving hierarchical data. Based on empowered similarity a post relational query language is formulated for the querying needs of temporal data warehouses.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Getov, V.

Category: A

FTE: 1.00

Identifier: 9510831460612

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type: Journal article**

Title:

Multiparadigm communications in Java for grid computing

Journal title: Communications of the ACM

Month/year of publication: October 2001 **Pagination:** 118-125

Volume: 44(10)

ISSN: 0001-0782

URL: <http://doi.acm.org/10.1145/383845.383872>

DOI: 10.1145/383845.383872

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Foster, I.

External author: Yes

2: Philippsen, M.

External author: Yes

3: von Laszewski, G.

External author: Yes

Other relevant details:

Advanced applications such as those that arise in science and engineering can require the use of multiple different communication abstractions, ranging from message passing to remote method invocation and component frameworks. We have shown here how a mixture of existing Java constructs and innovative implementation techniques allow one to use these different communication abstractions efficiently within a single integrated Java framework. The result is a programming approach that appears particularly advantageous in dynamic and heterogeneous Grid environments.

Output number: 2 **Output type: Journal article**

Title:

Mixed language high-performance computing for plasma simulations

Journal title: Scientific Programming

Month/year of publication: January 2003 **Pagination:** 57-66

Volume: 11(1)

ISSN: 1058-9244

URL: <http://iospress.metapress.com/openurl.asp?genre=article&issn=1058-9244&volume=11&issue=1&spage=57>

DOI:

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Lu, Q.

External author: No

Other relevant details:

We present a hybrid Java/Fortran implementation of a parallel particle-in-cell (PIC) algorithm for plasma simulations. In our approach, the time-consuming components of this application are designed and implemented as Fortran subroutines, while less calculation-intensive components usually involved in building the user interface are written in Java. The two types of software modules have been glued together using the Java native interface (JNI). Our mixed-language PIC code was tested and its performance compared with pure Java and Fortran versions of the same algorithm

University of Westminster : 23 - Computer Science and Informatics RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution

Title:

Agent-based service management in large datacentres and grids

Conference: 3rd IEEE/ACM International Symposium on Cluster Computing and the Grid (Ccgrid 2003)

Month/year of publication: 12/05/2003 **Number of pages:** 633-640

Media of output:

ISSN: 0769519199

URL: <http://dx.doi.org/10.1109/CCGRID.2003.1199425>

DOI: 10.1109/CCGRID.2003.1199425

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Corsava, S.

External author: No

Other relevant details:

Increased computational demands and data mining present the IT world with new challenges. Amongst others, the maturing grid technology aims to address them. To take full advantage of the grid capabilities and enhance its effectiveness in complex and dynamic computational environments, we must make service management more stable, less computationally expensive and more autonomic. In this paper, we propose a synthetic approach to deal with service management in large Unix datacentres that involves the employment of intelligent agents and metadata. These agents can automatically detect and correct faults at run-time and manage services.

Output number: 4 **Output type:** Conference contribution

Title:

Integrating mobile devices into the grid: design considerations and evaluation

Conference: 11th International Euro-Par Conference, Lisbon, Portugal, August 30 - September 2, 2005

Month/year of publication: 30/08/2005 **Number of pages:** 1080-1088

Media of output:

ISSN: 3540287000

URL: http://dx.doi.org/10.1007/11549468_118

DOI: 10.1007/11549468_118

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Isaiadis, S.

External author: No

Other relevant details:

For future Grids to be truly ubiquitous one must find ways to compensate for the limitations of mobile devices and integrate them into the Grid, in order to leverage resources and broaden the range of services. The unreliability and limitations of mobile resources and services could significantly degrade the overall Grid availability and performance. This paper introduces the utilization of various mobile devices in the form of a single virtual wireless "cluster" that will hide the heterogeneity and dynamicity, mask the failures, provide centralized management and monitoring and allow for the federation of similar services or resources.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Jacobson , C

Category: C

FTE: 0.00

Identifier: 0310830020706

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type: Conference contribution**

Title:

Modelling and application of contrast enhancement of visually indistinct colours using simple single band image capture techniques

Conference: Proceedings of Image Processing, Image Quality, Image Capture Systems Conference, 2003, May 13-16, Rochester, New York, USA

Month/year of publication: 13/05/2003 **Number of pages:** 194-198

Media of output:

ISSN: 0892082453

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Jenkin, R.B.

External author: Yes

Additional authors:

Other relevant details:

For the first time a rationale has been described for quantifying and modelling how optical filters may be used for visualising what would not normally be recorded. It has led to application by medical and forensic investigators who are now applying this technique and to further research and consultancy in its application to fingerprint and medical imaging

Output number: 2 **Output type: Conference contribution**

Title:

Some Problems and Solutions in Quantifying Image Quality

Conference: International Congress of Imaging Science. 2002, May 13-17. Tokyo, Japan

Month/year of publication: 13/05/2002 **Number of pages:** 3-4

Media of output:

ISSN: 0892082607

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Other relevant details:

As an invited plenary lecture to the major international imaging conference this paper brought fundamental ideas on how image quality may be measured to the attention of imaging scientists from many different disciplines. It has led to further research collaboration and a greater understanding of the many issues involved in measuring image quality.

Output number: 3 **Output type: Chapter in book**

Title:

Metric approaches to image quality

Editors: Macdonald, Lindsay W. and Luo, M. Ronnier

Book title: Colour image science: exploiting digital media

Publisher: John Wiley & Sons

Year of publication: 2002

Pagination: 371-392

ISBN: 0471499277

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Triantaphillidou, S.

External author: No

Additional authors:

Other relevant details:

This is a chapter in a book that summarises fundamental approaches to measuring image quality. It brings together previously published work and the then latest approaches with fundamental issues in relation to scene content. It has reached a wider audience than is normal in the dissemination of research and has set the scene for further projects in search of one of the 'holy grails' in image quality – the influence of the original scene, and contributed to recognition in the form of awards and to further research projects by the Computer Vision and Imaging Science Group.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 4 **Output type:** Journal article

Title:

On the Light Fading of Colorants in Hard Copy Media

Journal title: Imaging Science Journal

Month/year of publication: June 2002 **Pagination:** 83-95

Volume: 50

ISSN: 1368-2199

DOI:

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Saunders, A.E.

External author: Yes

Additional authors:

Other relevant details:

Although it is well known that modern hard copy output (ink jet prints for example) fade relatively rapidly, virtually all approaches to date have been phenomenological. They have been based on measuring changes over time in laboratory controlled environments. This paper makes use for the first time of a fundamental physical model for determining changes with time and relates these to measured values. This initial approach is slow to being adopted in view of commercial pressures but if explored further could provide a more complete basis for understanding the reasons for fading and improving their light stability.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Jin, L.

Category: A

FTE: 1.00

Identifier: 0510830039414

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type: Journal article**

Title:

Adorning VRML worlds with environmental aspects

Journal title: IEEE Computer Graphics and Applications

Month/year of publication: January 2001 **Pagination:** 6-9

Volume: 21(1)

ISSN: 0272-1716

URL: <http://doi.ieeecomputersociety.org/10.1109/MCG.2001.895123>

DOI: 10.1109/MCG.2001.895123

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Wen, Z.

External author: Yes

Additional authors: 0

Other relevant details:

Although researchers have applied VRML technology to information visualization, little work has so far been done to add environmental aspects into VRML architectural models. With our project, we aimed to design an effective approach for adding environmental aspects to VRML architectural models. This approach tries to give VRML worlds greater realism and better visual quality while maintaining an acceptable navigation speed. The software package we developed - VREnhancer has provided VRML world creators more flexibility and feasibility to adorn and change their designs. This paper looks at the development of the project, its design and implementation, and the related technology.

Output number: 2 **Output type: Conference contribution**

Title:

E-manufacturing in networked virtual environments

Conference: 2001 IEEE International Conference on Systems, Man & Cybernetics: October 7-10, 2001, Tucson Convention Center, Tucson, Arizona, USA

Month/year of publication: 07/10/2001 **Number of pages:** 1845-1849

Media of output:

ISSN: 0780370872

URL: <http://dx.doi.org/10.1109/ICSMC.2001.973604>

DOI: 10.1109/ICSMC.2001.973604

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Hall, F.

External author: Yes

2: Lister, P.M.

External author: Yes

3: Oraifige, I.A.

External author: Yes

Additional authors: 0

Other relevant details:

The research paper proposed a cost-effective approach to create an e-Manufacturing system in Networked Virtual Environments (Net-VEs) and evaluated this system by comparison with a traditional product development approach. The Web-based e-manufacturing system allows engineers and designers to visualise, explore, manipulate and interact with manufacturing applications by sharing the manufacturing 3D data in Net-VEs. By reducing costs and cycle time of product development, such an e-manufacturing system as a new generation of product development solution will speed up the major activities of manufacturing engineering and hence produce better quality products in a shorter time at more competitive price.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution

Title:

Real time multimodal interaction with animated virtual human

Conference: 10th International Conference on Information Visualization (IV'06)

Month/year of publication: 05/07/2006 **Number of pages:** 557-562

Media of output:

ISSN: 0769526020

URL: <http://dx.doi.org/10.1109/IV.2006.88>

DOI: 10.1109/IV.2006.88

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Wen, Z.

External author: Yes

Additional authors: 0

Other relevant details:

Real time animation creation of realistic virtual human still remains as a challenge. This paper presents a real time animation framework in which animated virtual human is capable of performing multimodal interactions with human user. The virtual human in the system relies on a perception system to capture information from its environment and respond to user's commands by a combination of non-verbal behaviours. A language processing module and an efficient motion generation method has been developed to produce variations in agent's behaviours depending on its momentary emotional states in order to increase the believability of the human agent's behaviours.

Output number: 4 **Output type:** Conference contribution

Title:

Distributed VR for collaborative design and manufacturing

Conference: 11th International Conference on Information Visualisation (IV '07)

Month/year of publication: 04/07/2007 **Number of pages:** 792-797

Media of output:

ISSN: 9780769529004

URL: <http://dx.doi.org/10.1109/IV.2007.41>

DOI: 10.1109/IV.2007.41

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Oraifige, I.A.

External author: Yes

2: Wen, Z.

External author: Yes

Additional authors: 0

Other relevant details:

Virtual Manufacturing applies Virtual Reality technology to provide digital manufacturing solutions to support modern industry in both 3D visual and interactive way. We propose a distributed VM system for Small and Medium-sized Enterprises (SMEs) with limited equipment, funds and technical capabilities. The system enables SMEs to perform collaborative tasks including design, manufacturing and resources sharing through the World Wide Web in lower cost. This paper describes the design and critical integration issues of the system and the use of the Web 3D technology - X3D. It also evaluates the distributed VM system by comparing it to the conventional stand-alone CAD/CAM system.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Name: Kacsuk, P.

Category: A

FTE: 0.25

Identifier: 0110831766962

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type:** Journal article

Title:

P-GRADE: a grid programming environment

Journal title: Journal of Grid Computing

Month/year of publication: June 2003 **Pagination:** 171-197

Volume: 1(2)

ISSN: 1570-7873

URL: <http://dx.doi.org/10.1023/B:GRID.0000024073.65405.63>

DOI: 10.1023/B:GRID.0000024073.65405.63

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 3

1: Dozsa, G.

External author: Yes

2: Kovacs, J.

External author: Yes

3: Lovas, R.

External author: Yes

Other relevant details:

Programming parallel and distributed systems is much more complicated than programming sequential computers. Our research aimed at developing a high-level, graphical parallel programming environment that can transparently be used for supercomputers, clusters and grid systems. P-GRADE is the first parallel programming environment that can support both supercomputers, clusters and Grids. Its graphical programming language, graphical editor, graphical workflow language, workflow engine, systematic parallel/distributed debugger, parallel check pointing and application monitoring system makes this environment unique and extremely novel compared to similar systems. P-GRADE also supports a DAG-based workflow concept that became the basis of the very successful P-GRADE Grid portal.

Output number: 2 **Output type:** Journal article

Title:

Multi-grid, multi-user workflows in the P-GRADE grid portal

Journal title: Journal of Grid Computing

Month/year of publication: September 2005 **Pagination:** 221-238

Volume: 3(3-4)

ISSN: 1570-7873

URL: <http://dx.doi.org/10.1007/s10723-005-9012-6>

DOI: 10.1007/s10723-005-9012-6

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Sipos, G.

External author: Yes

Other relevant details:

The research aimed at developing a new workflow oriented grid portal concept that enables the interoperability of various grids and supports users to develop and run their grid workflows in a collaborative way. As a result of the research the collaborative version of P-GRADE grid portal was prototyped as the first grid portal that enables scientists to collaboratively construct a scientific workflow and collaboratively execute the workflow in different grids using the different certificates of collaborative users.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Name: Kapetanios, E.

Category: A

FTE: 1.00

Identifier: 0510830034590

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type:** Internet publication

Title:

A parametric linguistics based approach for multi-lingual web querying

Publisher: Data & Knowledge Engineering

Publication date: 11/09/2007

ISSN: 0169-023X

URL: <http://dx.doi.org/10.1016/j.datak.2007.07.008>

DOI: 10.1016/j.datak.2007.07.008

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Additional authors: 0

Co-authors:

1: Sugumaran, V.

External author: Yes

2: Tanase, D.

External author: No

Other relevant details:

Given the inadequacy of currently available Web search engines to enable semantically precise results from multi-lingual contents on the Web, a new Web query language and approach has been presented in this paper, the specification of which departs from the state-of-the-art theoretical underpinnings (automata theory in theoretical computer science) for the specification of programming and query languages. It is meant to provide a Universal Query Language relying on the specification of a state choice machine rather than a Turing Machine.

Output number: 2 **Output type:** Journal article

Title:

Simplifying syntactic and semantic parsing of NL-based queries in advanced application domains

Journal title: Data & Knowledge Engineering

Month/year of publication: October 2005 **Pagination:** 38-58

Volume: 55(1)

ISSN: 0169-023X

URL: <http://dx.doi.org/10.1016/j.datak.2004.11.008>

DOI: 10.1016/j.datak.2004.11.008

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Additional authors: 0

Co-authors:

1: Baer, D.

External author: Yes

2: Groenewoud, p.

External author: Yes

Other relevant details:

Given the inadequacy of database query language (SQL, OQL, etc.) to provide a more user friendly and meaningful way of querying data from databases, this paper presented an ontology driven query language and interaction mechanism, which dramatically simplifies integration of syntactic and semantic parsing.

Output number: 3 **Output type:** Conference contribution

Title:

Cross-lingual information retrieval and delivery using community mobile networks

Conference: IEEE 1st International Conference on Digital Information Management (ICDIM 2006)

Month/year of publication: 06/12/2006 **Number of pages:** 320-325

Media of output:

ISSN: 142440682X

URL: <http://dx.doi.org/10.1109/ICDIM.2007.369217>

DOI: 10.1109/ICDIM.2007.369217

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Additional authors: 0

Co-authors:

1: Schriram, R.

External author: Yes

2: Sugamaram, V.

External author: Yes

Other relevant details:

Given the lack of a methodology for cross-lingual Web querying via mobile devices, (phones, PDA's, etc.), the paper suggested a methodology for such environments. In particular, it discusses a modularized architecture for extracting meaningfully translated query results to be presented in the context of such environments.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 4

Output type: Conference contribution

Title:

The design and implementation of a meaning driven data query language

Conference: Proceedings of the 14th International Conference on Scientific and Statistical Database Management, July 24-26, 2002, Edinburgh, Scotland, UK.

Month/year of publication: 24/07/2002 **Number of pages:** 20-23

Media of output:

ISSN: 0769516327

URL: <http://dx.doi.org/10.1109/SSDM.2002.1029702>

DOI: 10.1109/SSDM.2002.1029702

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Baer, D.

External author: Yes

2: Groenewoud, P.

External author: Yes

3: Mueller, P.

External author: Yes

Additional authors: 0

Other relevant details:

The design and implementation of a query language for scientific and statistical data has been presented by this paper. It has been the first attempt to present a query language and system capable of constructing meaningful queries in a very intuitive and user friendly way. It has been one of the first, or even the first query language, proposed for the emerging new generation of the Web (Semantic Web). The concept and system has been operationally used (studies in coronary angiography and revascularization as well as in hysterectomy) in more than 10 Swiss hospitals.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Name: Kiss, T.

Category: A

FTE: 1.00

Identifier: 0110831806110

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type:** Journal article

Title:

GEMLCA: running legacy code applications as grid services

Journal title: Journal of Grid Computing

Month/year of publication: June 2005 **Pagination:** 75-90

Volume: 3(1-2)

ISSN: 1570-7873

URL: <http://dx.doi.org/10.1007/s10723-005-9002-8>

DOI: 10.1007/s10723-005-9002-8

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 2

1: Delaitre, T.

External author: No

2: Goyeneche, A.

External author: No

3: Terstyanszky, G.

External author: No

Other relevant details:

There are many legacy code applications that cannot be run in a Grid environment without significant modification. To avoid re-engineering of legacy code, we developed the Grid Execution Management for Legacy Code Applications (GEMLCA) that enables deployment of legacy code applications as Grid services. GEMLCA is unique solution that has been registered as a US patent. It has also been successfully deployed on the UK National Grid service and on the European EGEE Grid in production environment utilised by application scientists all over the world. Several applications have been successfully deployed on the Grid utilising GEMLCA.

Output number: 2 **Output type:** Conference contribution

Title:

Legacy code support for production grids

Conference: 6th IEEE/ACM International Workshop on Grid Computing: November 13-14 2005. Seattle, Washington, USA

Month/year of publication: 13/11/2005 **Number of pages:** 278-283

Media of output:

ISSN: 0780394925

URL: <http://dx.doi.org/10.1109/GRID.2005.1542754>

DOI: 10.1109/GRID.2005.1542754

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 4

1: Illes, Sz.

External author: Yes

2: Kecskemeti, G.

External author: Yes

3: Terstyanszky, G.

External author: No

Other relevant details:

In order to improve reliability and to deal with the high complexity of existing middleware solutions, today's production Grid systems restrict the services to be deployed on their resources. On the other hand end-users require a wide range of value added services to fully utilize these resources. This paper describes a solution how legacy code support is offered as third party service for production Grids. The paper set the basis to deploy third party legacy code services in production environments without compromising security and reliability, and set the basis for production level GEMLCA deployment.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution

Title:

Dynamic testing of legacy code resources on the grid

Conference: Third Conference on Computing Frontiers, 2006, Ischia, Italy, May 3-5, 2006

Month/year of publication: 03/05/2006 **Number of pages:** 261-268

Media of output:

ISSN: 1595933026

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 2

1: Bitonti, L.

External author: No

2: Delaitre, T.

External author: No

3: Terstyanszky, G.

External author: No

Other relevant details:

In order to utilise resources in a production Grid environment constant monitoring of these resources is essential. Historical information collected by these monitoring systems can enhance the capabilities of current production Grid systems and Grid brokers with reliable and accurate resource availability information. The solution called Grid Monitoring Toolkit (GMT) has been successfully deployed in production environment on the National Grid Service. GMT is also utilised by the GIN Resource Testing Portal that provides detailed resource availability information for the Grid Interoperability Now Working Group of the Open Grid Forum and led to international collaborations within the European CoreGrid Project.

Output number: 4 **Output type:** Conference contribution

Title:

Scalable desktop grid system

Conference: High Performance Computing for Computational Science - VECPAR 2006: 7th International Conference, Rio de Janeiro, Brazil, June 10-13, 2006

Month/year of publication: 10/06/2006 **Number of pages:** 27-38

Media of output:

ISSN: 9783540713500

URL: http://dx.doi.org/10.1007/978-3-540-71351-7_3

DOI: 10.1007/978-3-540-71351-7_3

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Kacsuk, P.K.

External author: No

2: Podhorszki, N.

External author: Yes

Other relevant details:

The research created the foundation of a new extended Desktop Grid architecture that enables the integration utility and desktop Grid systems. Current Desktop Grids connect all PCs into a flat hierarchy. SZTAKI Desktop Grid extends this to include computing clusters displaying as single powerful PCs. Such building blocks support overtaking additional tasks from other desktop grids, enabling the set-up of a hierarchy. This brings desktop grids closer to other grid technologies where sharing resources by several users is the most important feature. The paper defined those major principles that led to the European Commission founded EDGeS Project.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Konstantinou, V.

Category: A

FTE: 1.00

Identifier: 8610831253610

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Conference contribution

Title:

Ink discrimination based on co-occurrence analysis of visible and infrared images

Conference: 9th International Conference on Document Analysis and Recognition, ICDAR 2007

Month/year of publication: 23/09/2007 **Number of pages:** 1148-1152

Media of output:

ISSN: 0769528228

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors:

1: Kokla, V.

External author: No

2: Psarrou, A.

External author: No

Other relevant details:

This paper presents a novel approach for discriminating and identifying inks based on the correlations of image variations. The behaviour of inks during the scripting process is considered and corresponding computational signature models created. The variations are captured using visible and infrared illumination and studied using co-occurrence matrices.

Output number: 2

Output type: Conference contribution

Title:

Ink recognition based on statistical classification methods

Conference: 2nd IEEE International Conference on Document Image Analysis for Libraries. Lyon, France, April 27-28, 2006 (DIAL'06)

Month/year of publication: 27/04/2006 **Number of pages:** 254-264

Media of output:

ISSN: 0769525318

URL: <http://dx.doi.org/10.1109/DIAL.2006.24>

DOI: 10.1109/DIAL.2006.24

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Kokla, V.

External author: No

2: Psarrou, A.

External author: No

Other relevant details:

In this work we present an innovative methodology and related algorithms used to interpret the photometric properties of inks and produce computational models which classify diverse types of inks found in Byzantine-era manuscripts. The optical properties of these inks are extracted by the interpretation of digital images taken in the visible and infrared area of the light spectrum. The inks are modeled based on their grey-level and colour information using a mixture of Gaussian functions and classified using Bayes' decision rule.

Output number: 3

Output type: Internet publication

Title:

Computational models for pigment analysis

Publisher: Applied Physics A: Materials Science & Processing

Publication date: 06/09/2007

ISSN: 1432-0630

URL: <http://dx.doi.org/10.1007/s00339-007-4236-x>

DOI: 10.1007/s00339-007-4236-x

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Kokla, V.

External author: No

2: Psarrou, A.

External author: No

Other relevant details:

This work is an extension to our ink identification work. Most of the image-based research in pigments is focused on generation rather than analysis and are mainly applied in the restoration of colours in paintings and frescoes. In this study we show that blue and green pigments can be represented in the visible and infrared regions of the spectrum through a mixture of Gaussian functions that can give most readily differentiate between those pigments that exhibit similar intensities.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 4

Output type: Conference contribution

Title:

Probability analysis in art conservation

Conference: First International Conference on Computer Vision Theory and Applications, 25 - 28 February, 2006, Setúbal, Portugal (VISAPP 2006)

Month/year of publication: 25/02/2006 **Number of pages:** 508-514

Media of output:

ISSN: 9728865406

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Kokla, V.

External author: No

2: Psarrou, A.

External author: No

Additional authors: 0

Other relevant details:

This paper presents the results of our ongoing research in the development of manuscript ink-identification methods which are non-destructive, non invasive, do not involve physical sampling and can be applied in situ. The work has so far being funded by two EU projects (diARTgnosis – Culture 2000, and NOESIS – International Cooperation). The paper describes the calibration experiments performed using known inks which were constructed under laboratory conditions and evaluates our identification algorithms using a number known and unknown inks.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Lancaster, D.J.

Category: A

FTE: 1.00

Identifier: 0000845107359

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type: Journal article**

Title:

The statistical mechanics of travelling salesman type problems

Journal title: Journal of Statistical Mechanics: Theory and Experiment

Month/year of publication: January 2005 **Pagination:** 1-8

Volume: L01001

ISSN: 1742-5468

URL: <http://dx.doi.org/10.1088/1742-5468/2005/01/L01001>

DOI: 10.1088/1742-5468/2005/01/L01001

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Dean, D.S.

External author: Yes

2: Majumdar, S.N.

External author: Yes

Other relevant details:

Describes a statistical physics method to compute the average path length for cities located randomly on an arbitrarily shaped geometrical domain in any dimension at finite temperature. The novel approach, based on annealing while fixing the density of cities, is shown to agree with simulations and recovers known results for MAX-TSP. This work has stimulated study of other approaches capable of accessing low temperatures where the usual TSP minimum appears. This paper was selected for discussion by the Bell labs (USA) journal club in March 2006.

Output number: 2 **Output type: Journal article**

Title:

Cluster growth in two growing network models

Journal title: Journal of Physics A: Mathematical and General

Month/year of publication: February 2002 **Pagination:** 1179-1194

Volume: 35(5)

ISSN: 0305-4470

URL: <http://dx.doi.org/10.1088/0305-4470/35/5/305>

DOI: 10.1088/0305-4470/35/5/305

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

Other relevant details:

Complex networks with structure distinct from classic homogeneous Erdos-Renyi graphs are of interest in fields ranging from biology to computer science. Such networks can be generated through growth processes. This contribution, early in the recent explosion in interest in the field, treats in detail one of the simplest growth models describing a class of tree graphs.

Output number: 3 **Output type: Journal article**

Title:

Two combinatorial models with identical statics yet different dynamics

Journal title: Journal of Physics A: Mathematical and General

Month/year of publication: January 2004 **Pagination:** 1125-1143

Volume: 37(4)

ISSN: 0305-4470

URL: <http://dx.doi.org/10.1088/0305-4470/37/4/003>

DOI: 10.1088/0305-4470/37/4/003

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

Other relevant details:

The P/NP classification from the theory of complexity is not a very fine predictor of the difficulty of specific problems, so a consistent theme of research has been to devise other approaches. From a physics perspective it is natural to look for ways to characterise the cost function landscape. This work describes a curious pair of models with identical sets of cost levels yet with landscapes so distinct as to completely change the dynamics of local search algorithms.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Output number: 4

Output type: Journal article

Title:

Fluctuations in the site-disordered traveling salesman problem

Journal title: Journal of Physics A: Mathematical and Theoretical

Month/year of publication: November 2007

Pagination: 13837-13857

Volume: 40(46)

ISSN: 1751-8113

URL: <http://dx.doi.org/10.1088/1751-8113/40/46/002>

DOI: 10.1088/1751-8113/40/46/002

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Dean, D.S.

External author: Yes

Additional authors: 0

Other relevant details:

The site-disordered traveling salesman problem (TSP) with N cities on M sites is introduced. This discrete model is well-defined and a saddle point approach that takes account of fluctuations can be rigorously analysed. In one limit, this reduces to a discrete version of the functional approach of paper 1). In another limit, the failure of the method for the ordinary TSP is exposed in detail. Finally, a route is suggested towards resolving the dilute lattice based limit.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Name: Ovtchinnikov, E.

Category: A

FTE: 1.00

Identifier: 9410831440019

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Journal article

Title:

Sharp convergence estimates for the preconditioned steepest descent method for hermitian eigenvalue problems

Journal title: SIAM Journal on Numerical Analysis

Month/year of publication: January 2006

Pagination: 2668-2689

Volume: 43(6)

ISSN: 0036-1429

URL: <http://dx.doi.org/10.1137/040620643>

DOI: 10.1137/040620643

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

Other relevant details:

Steepest descent method is a classical iterative minimization algorithm that can also be applied to computing eigenvalues of self-adjoint (Hermitian) matrices. In large scale eigenvalue computation, the convergence of iterations can be very slow, but in many cases it can be accelerated by invoking the so-called preconditioning, a technique that is widely used nowadays for solving systems of linear equations of very large size. This paper provides sharp (i.e. in certain sense non-improvable) convergence estimates for the steepest descent iterations with preconditioning applied to Hermitian eigenvalue computation.

Output number: 2

Output type: Journal article

Title:

Cluster robustness of preconditioned gradient subspace iteration eigensolvers

Journal title: Linear Algebra and its Applications

Month/year of publication: May 2006

Pagination: 140-166

Volume: 415(1)

ISSN: 0024-3795

URL: <http://dx.doi.org/10.1016/j.laa.2005.06.039>

DOI: 10.1016/j.laa.2005.06.039

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

Other relevant details:

Subspace iteration eigensolvers are algorithms for computing several eigenpairs (eigenvalues and eigenvectors) simultaneously. Practical computation demonstrates that they are more efficient than more traditional algorithms computing eigenpairs successively, especially in the case where eigenvalues are clustered, i.e. very close to each other; however, theoretical results that would be consistent with the apparent 'cluster robustness' of the former are scarce. This paper investigates the convergence behaviour of a class of subspace iteration eigensolvers and provides convergence estimates that demonstrate their cluster robustness.

Output number: 3

Output type: Journal article

Title:

Cluster robust error estimates for the Rayleigh-Ritz approximation I: Estimates for invariant subspaces and II estimates for eigenvalues

Journal title: Linear Algebra and its Applications

Month/year of publication: May 2006

Pagination: 167-209

Volume: 415(1)

ISSN: 0024-3795

URL: <http://dx.doi.org/10.1016/j.laa.2005.06.040>

DOI: 10.1016/j.laa.2005.06.040

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

Other relevant details:

The second part of this research was published with DOI 10.1016/j.laa.2005.06.041.

The Rayleigh-Ritz procedure is a method that effectively reduces the size of the eigenvalue problem to which it is applied: e.g. a large scale eigenvalue problem can be reduced to that of a relatively small size solvable by standard software packages such as LAPACK. The transformation of the problem generally distorts the solution, and it is important to know by how much. Some available estimates for this distortion are inadequate in the case where eigenvalues are clustered, i.e. very close to each other. These two papers present estimates, known and new, that are 'cluster robust', i.e. are free from such a limitation.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Output number: 4

Output type: Journal article

Title:

Convergence estimates for the generalized davidson method for symmetric eigenvalue problems I: the preconditioning aspect and II: the subspace acceleration

Journal title: SIAM Journal on Numerical Analysis

Month/year of publication: January 2003 **Page number:** 258-286

Volume: 41(1)

ISSN: 0036-1429

URL: <http://dx.doi.org/10.1137/S0036142902411756>

DOI: 10.1137/S0036142902411756

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

Other relevant details:

Second part published with DOI 10.1137/S0036142902411768.

Davidson method is an important numerical tool that is widely used for solving large scale eigenvalue problems. It is an iterative method that produces a sequence of approximate solutions, and its efficiency relies on quick convergence of these to the exact solution. These two papers investigate theoretically the driving forces behind the remarkably fast convergence of the Davidson method.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Paurobally, S.

Category: A

FTE: 1.00

Identifier: 0710830063804

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Journal article

Title:

A framework for web service negotiation

Journal title: ACM Transactions on Autonomous and Adaptive Systems (TAAS)

Month/year of publication: November 2007 **Pagination:** 23

Volume: 2(4)

2007

ISSN: 1556-4665

DOI: 10.1145/1293731.1293734

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Tamma, V.

External author: Yes

2: Wooldridge, M.

External author: Yes

Other relevant details:

Although the relevance of Grid for agent research and vice versa has been identified in several fora, concrete collaborative applications are still in their infancy. This paper discusses the deployment of multi-agent negotiation techniques to facilitate dynamic negotiation for Grid resources as a step closer to an adaptive and autonomous Grid. A web service development of the contract net protocol for negotiation between insurance companies and repair companies is provided and shows the added value of negotiable interactions between web services that could potentially save 172M euros in an automated Insurance Grid.

Variance between dates of imprint and publication:

Cover date states December 2007, but actually published on 14th November 2007.

Output number: 2

Output type: Journal article

Title:

Automating negotiation for m-services

Journal title: IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems & Humans

Month/year of publication: November 2003 **Pagination:** 709-724

Volume: 33(6)

2003

ISSN: 1083-4427

URL: <http://dx.doi.org/10.1109/TSMCA.2003.819654>

DOI: 10.1109/TSMCA.2003.819654

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Jennings, N.R.

External author: Yes

2: Turner, P.J.

External author: Yes

Other relevant details:

This research extends current research efforts in software-based mobile telecommunications to more sophisticated forms of multi-issue negotiation for the provision of personalised services. Automated negotiation protocols and strategies applicable in m-commerce environments are specified and implemented. Specifically, the paper develops and evaluates time-constrained bilateral negotiation algorithms, allowing software agents to adapt to the quality of the network and their experience of similar interactions. This work has been undertaken in collaboration with mobile telecommunications companies to develop future generation adaptive mobile telecommunication handheld devices.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Journal article
Title:

Protocol engineering for web services conversations

Journal title: Engineering Applications of Artificial Intelligence

Month/year of publication: March 2005 **Pagination:** 237-254

Volume: 18(2)

ISSN: 0952-1976

URL: <http://dx.doi.org/10.1016/j.engappai.2004.12.005>

DOI: 10.1016/j.engappai.2004.12.005

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Jennings, N.R.

External author: Yes

Other relevant details:

The research contributes to the state of the art in web services by developing a framework that enables to specify richer and more flexible interactions between web services. It combines and extends two recently developed web service languages, WS-Conversation Language (WSCL) and WS-Agreement, in order to obtain a method for engineering protocols of sufficient expressiveness for the next generation of flexible and autonomous web services. Being carried out in collaboration with several leading mobile telecommunications companies, the work in this paper reflects important practical issues in protocol engineering such as tailoring providers' services to customers needs.

Output number: 4 **Output type:** Conference contribution

Title:

A formal framework for agent interaction semantics

Conference: Fourth International Joint Conference on Autonomous Agents and Multiagent Systems, Utrecht University, the Netherlands, July 25-29, 2005

Month/year of publication: 25/07/2005 **Number of pages:** 91-98

Media of output:

ISSN: 1595930930

URL: <http://doi.acm.org/10.1145/1082473.1082488>

DOI: 10.1145/1082473.1082488

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Cunningham, J.

External author: Yes

2: Jennings, N.R.

External author: Yes

Other relevant details:

This paper addresses a number of unresolved issues in agent interactions in light of criticisms on ambiguities in Agent Language and interaction protocol semantics. It proposes an integrated framework, called PDL-BI, based on Propositional Dynamic Logic and Belief and Intention modalities, and gives a sound and complete axiomatisation of PDL-BI for representing and reasoning about an agent's attitudes. An improved semantics for an agent language is also given which opens the prospect of the specification of the semantics of Interaction protocols.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Psarrou, A.

Category: A

FTE: 1.00

Identifier: 9210831291820

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Journal article

Title:

Recognition of human gestures and behaviour based on motion trajectories

Journal title: Image and Vision Computing

Month/year of publication: April 2002 **Pagination:** 349-358

Volume: 20(5-6)

ISSN: 0262-8856

URL: [http://dx.doi.org/10.1016/S0262-8856\(02\)00007-0](http://dx.doi.org/10.1016/S0262-8856(02)00007-0)

DOI: 10.1016/S0262-8856(02)00007-0

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Gong, S.

External author: Yes

2: Walter, M.

External author: No

Other relevant details:

This work was funded under a collaborative agreement between Queen Mary, London and Westminster University. It's originality is that it addresses the non-linear temporal scaling and ambiguities in temporal segmentation by introducing a statistical dynamic framework based on learning prior and continuous propagation of density models of behaviour patterns. The experimentation was based on a database that contained 160 sequences of walking behaviours and gestures. This work has led to a further six publications in international conferences and a PhD thesis and has formed the basis of two European proposals on automatic gesture acquisition for computer games and medical interfaces.

Output number: 2

Output type: Journal article

Title:

Corresponding dynamic appearances

Journal title: Image and Vision Computing

Month/year of publication: April 2002 **Pagination:** 307-318

Volume: 20(4)

ISSN: 0262-8856

URL: [http://dx.doi.org/10.1016/S0262-8856\(02\)00025-2](http://dx.doi.org/10.1016/S0262-8856(02)00025-2)

DOI: 10.1016/S0262-8856(02)00025-2

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Gong, S.

External author: Yes

2: Romdani, S.

External author: No

Other relevant details:

This work was funded under a collaborative agreement between Queen Mary, London and Westminster University. This work addresses the problem of recovering correspondences of both shape and texture across views by establishing structured sparse correspondence between face images using non-linear dynamic appearance models of both shape and texture and the adoption of Kernel PCA. The experimentation is based on a face database composed of six individuals taken at pose angles from -90 to +90 degrees at 10 degree increments using a Pohlemus electromagnetic tracker and results were reported on both previously seen and novel faces. This work has led to further development within and outside UK.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution
Title:

Learning 2D hand shapes using the topology preservation model GNG
Conference: 9th European Conference on Computer Vision (ECCV 2006)
Month/year of publication: 07/05/2006 **Number of pages:** 313-324
Media of output:
ISSN: 3540338322
URL: http://dx.doi.org/10.1007/11744023_25
DOI: 10.1007/11744023_25

Is duplicate: No **Is interdisciplinary:** No **Pending publication:** No
Research group:
Co-authors: **Additional authors:** 0
1: Angelopoulou, A. External author: No
2: Garcia Rodriguez, J. External author: Yes

Other relevant details:

Recovering the shape of a class of objects requires establishing correct correspondences between manually or automatically annotated landmark points. In this work automated landmark extraction is accomplished through the use of the self-organising model, the growing neural gas network, which is able to learn and preserve the topological relations of a given set of input patterns without requiring a priori knowledge of the structure of the input space. The quality of the mapping throughout the adaptation process is measured using the topographic product.

Output number: 4 **Output type:** Conference contribution
Title:

Key-frame extraction algorithm using entropy difference
Conference: 6th ACM SIGMM International Workshop on Multimedia Information Retrieval
Month/year of publication: 15/10/2004 **Number of pages:** 39-45
Media of output:
ISSN: 1581139403
Is duplicate: No **Is interdisciplinary:** No **Pending publication:** No
Research group:
Co-authors: **Additional authors:** 0
1: Mentzelopoulos, M. External author: No

Other relevant details:

One of the first steps of video cataloguing, indexing and retrieval is the effective and efficient extraction of key-frames. The contribution of this paper is the development of an entropy-difference algorithm that performs spatial frame segmentation. The experimentation was based on 14 different types of action scripts and 6 other key-frame extraction algorithms where quantitative results show that the algorithm is successful in helping annotators automatically identify video key-frames and outperforms the other methods.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Name: Revett, K.

Category: A

FTE: 1.00

Identifier: 0010836878171

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Journal article

Title:

A novel machine learning approach to keystroke dynamics based user authentication

Journal title: International Journal of Electronic Security and Digital Forensics

Month/year of publication: July 2007

Pagination: 55-70

Volume: 1(1)

ISSN: 1751-911X

URL: <http://dx.doi.org/10.1504/IJESDF.2007.013592>

DOI: 10.1504/IJESDF.2007.013592

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 2

1: Ene, M.

External author: Yes

2: Gorunescu, F.

External author: Yes

3: Gorunescu, M.

External author: Yes

Other relevant details:

The majority of computer systems employ a login ID and password as the principal method for access security. In stand-alone situations, this level of security may be adequate, but when computers are connected to the internet, the vulnerability to a security breach is increased. In this paper, we investigate the use of a behavioural biometric based on keystroke dynamics. Although there are several implementations of keystroke dynamics available – their effectiveness is variable and dependent on the data sample and its acquisition methodology. The results from this study indicate that the equal error rate is significantly influenced by the attribute selection process and to a lesser extent on the authentication algorithm employed. Our results also provide evidence that a probabilistic neural network can be superior in terms of reduced training time and classification accuracy when compared with a typical MLFN back-propagation trained neural network.

Output number: 2

Output type: Conference contribution

Title:

Attribute selection for EEG signal classification using rough sets and neural networks

Conference: Rough Sets and Current Trends in Computing: 5th International Conference RSCTC 2006, Kobe, Japan, November 6-8, 2006

Month/year of publication: 06/11/2006

Number of pages: 408-417

Media of output:

ISSN: 9783540476931

URL: http://dx.doi.org/10.1007/11908029_43

DOI: 10.1007/11908029_43

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Jahankhani, P.

External author: No

2: Kodogiannis, V.

External author: No

3: Szczuka, M.

External author: Yes

Other relevant details:

This paper describes the application of rough sets and neural network models for classification of electroencephalogram (EEG) signals from two patient classes: normal and epileptic. First, the wavelet transform (WT) was applied to the EEG time series in order to reduce the dimensionality and highlight important features in the data. Statistical measures of the resulting wavelet coefficients were used for the classification task.

Employing rough sets, we sought to determine which of the acquired attributes were necessary/informative as predictors of the decision classes.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution
Title:

A machine learning approach to differentiating bacterial from viral meningitis

Conference: IEEE John Vincent Atanasoff 2006 International Symposium on Modern Computing (JVA'06)

Month/year of publication: 03/10/2006 **Number of pages:** 155-162

Media of output:

ISSN: 0769526438

URL: <http://dx.doi.org/10.1109/JVA.2006.2>

DOI: 10.1109/JVA.2006.2

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Ene, M.

External author: Yes

2: Gorunescu, F.

External author: Yes

Other relevant details:

Clinical reports indicate that differentiating bacterial from viral (aseptic) meningitis is still a difficult issue, compounded by factors such as age and time of presentation. Clinicians routinely rely on the results from blood and cerebrospinal fluid (CSF) to discriminate bacterial from viral meningitis. Tests such as the CSF Gram stain performed prior to broad-spectrum antibiotic treatment yield sensitivities between 60 and 92%. Sensitivity can be increased by performing additional laboratory testing, but the results are never completely accurate and are not cost effective in many cases. In this study, we wished to determine if a machine learning approach, based on rough sets and a probabilistic neural network could be used to differentiate between viral and bacterial meningitis.

Output number: 4 **Output type:** Conference contribution
Title:

Examination of the parameter space of a computational model of acute ischaemic stroke using rough sets

Conference: Rough sets and knowledge theory: second international conference, RSKT 2007 Toronto, Canada, May 2007 proceedings, Lecture Notes in Computer Science 4481

Month/year of publication: 14/05/2007 **Number of pages:** 534-541

Media of output:

ISSN: 9783540724575

URL: http://dx.doi.org/10.1007/978-3-540-72458-2_66

DOI: 10.1007/978-3-540-72458-2_66

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors:

Other relevant details:

Complex diseases such as stroke and cancer involve a wide range of biological parameters with respect to the systems involved and disease progression. Computational models of such diseases have led to new insights into the mechanism of action which have resulted in the development of novel therapeutic intervention strategies. Such models are generally quite complex because they incorporate a wide range of relevant biological variables and parameters. In this paper, we examine a biologically realistic computational model of acute ischaemic stroke with respect to the variable and parameter space using rough sets.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Name: Terstyanszky, G.

Category: A

FTE: 1.00

Identifier: 0010831735709

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type:** Chapter in book

Title:

User friendly environment to grid enabled legacy codes

Editors: Di Martino, Beniamino and Dongarra, Jack and Hoisie, Adolfo and Yang, Laurence Tianruo and Zima, Hans

Book title: Engineering the grid: status and perspective

Publisher: ASP Press

Year of publication: 2006

Pagination: 205-217

ISBN: 1588830381

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 5

1: Delaitre, T.

External author: No

2: Kacsuk, P.K.

External author: No

3: Kiss, T.

External author: No

Other relevant details:

Grid Execution Management for Legacy Code Applications (GEMLCA) is connected to a Grid portal, the P-GRADE portal, to support users to deploy and run applications as Grid services. Code owners can describe and publish their legacy codes as Grid services through a portlet to make it available for other users. GEMLCA with the P-GRADE portal opened up Grid computing to new user communities, such as bio-science, chemistry, medical and others, which previously were not able to use the Grid. These users can access Grid resources and services through the GEMLCA and a Grid portal using a web browser.

Output number: 2 **Output type:** Journal article

Title:

Extracting performance hints for grid users using data mining techniques: a case study in the NGS

Journal title: Mediterranean Journal of Computers & Networks

Month/year of publication: April 2007 **Pagination:** 52-61

Volume: 3(2)

ISSN: 1744-2397

DOI:

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 1

1: Goyeneche, A.

External author: No

2: Guim, F.

External author: Yes

3: Rodero, I.

External author: Yes

Other relevant details:

The performance estimation predicts job response times on different resources in different Grid environments. It extends previous performance estimation methods implemented for computer clusters. The approach uses workload logs as historical data in inductive learning to create models of the Grid environment to forecast execution times of submitted jobs. To use Grid computing in commercial (or non-academic) communities without performance prediction is almost impossible. Commercial users want to know the expected costs and execution times before submitting their applications to the Grid. The job response time predicted by this approach helps to allocate resources based on execution costs.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution

Title:

GEMLCA: grid execution management for legacy code architecture design

Conference: 30th Euromicro Conference: 31 August-3 September, 2004, Rennes, France

Month/year of publication: 31/08/2004 **Number of pages:** 477-483

Media of output:

ISSN: 0769521991

URL: <http://dx.doi.org/10.1109/EURMIC.2004.1333409>

DOI: 10.1109/EURMIC.2004.1333409

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 2

1: Delaitre, T.

External author: No

2: Goyeneche, A.

External author: No

3: Kacsuk, P.K.

External author: No

Other relevant details:

Grid Execution Management for Legacy Code Applications (GEMLCA) is the first OGSA based Grid service that supports migration of legacy codes to the Grid. GEMLC offers a number of interfaces to submit jobs and get results back. Its back-end layer has a plug-in structure to provide a level of abstraction for multiple Grid middleware. The plug-in structure supports job level interoperability among different Grids. There is no need for re-engineering legacy code applications with GEMLCA. Code owners should create Grid services of their applications and publish them. Users need only user-level knowledge to run these Grid services.

Output number: 4 **Output type:** Conference contribution

Title:

Creating scalable traffic simulation on clusters

Conference: 12th Euromicro Conference on Parallel, Distributed and Network-Based Processing, A Coruna, Spain, February 11 - 13, 2004 (PDP 2004)

Month/year of publication: 11/02/2004 **Number of pages:** 60-65

Media of output:

ISSN: 1066-6192

URL: <http://dx.doi.org/10.1109/EMPDP.2004.1271428>

DOI: 10.1109/EMPDP.2004.1271428

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Gourgoulis, A.

External author: No

2: Kacsuk, P.K.

External author: No

3: Winter, S.C.

External author: No

Other relevant details:

The MadCity traffic simulator was further developed and migrated first, to cluster, next to the Grid, using the P-GRADE parallel programming environment, to speed up the simulation. MadCity simulates a road network of a city and shows cars moving on the roads. To achieve scalability and to handle different traffic scenarios workflow templates were used. They help to control the number of processes used in the simulation without making modifications to the simulator's source code. Traffic simulation is essential in planning and control of road traffic. Traffic control defines strict time constraints on simulation which cannot meet without parallel computing.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Triantaphillidou, S.

Category: A

FTE: 1.00

Identifier: 9610831490258

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type: Journal article**

Title:

Measurements of the modulation transfer function of image displays

Journal title: Journal of Imaging Science and Technology

Month/year of publication: January 2004 **Pagination:** 58-65

Volume: 48(1)

ISSN: 1062-3701

URL: <http://www.imaging.org/store/epub.cfm?abstrid=30163>

DOI:

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Jacobson, R.E.

External author: No

Other relevant details:

This work proposes an original method for measuring the Modulation Transfer Function (MTF) of image displays that employs a high quality digital camera as the measuring device – which is shown to successfully replace the need for specialised and very expensive apparatus. The significance of the work is in that, it demonstrates that under controlled test conditions accurate measurements of the display frequency response can be achieved with the use of relatively simple equipment. The method is been adopted by various academic (eg. Colour Imaging, University of Leeds, UK) and industrial imaging laboratories (eg. Kodak Research Labs, USA). 4 citations in academic papers, 1 citation in a book (Color Imaging Science, Cambridge press 2005).

Output number: 2 **Output type: Journal article**

Title:

A case study in the digitisation of a photographic collection

Journal title: Imaging Science Journal

Month/year of publication: June 2002 **Pagination:** 97-115

Volume: 50(2)

ISSN: 1368-2199

DOI:

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Attridge, G.G.

External author: No

2: Jacobson, R.E.

External author: No

Other relevant details:

This paper is the result of collaboration between the Royal Photographic Society and the University of Westminster (summary of the first author's PhD project). One of the oldest photographic archives in the world (H.F.Talbot archive) was digitised and the image quality of the reproductions was quantified. The work demonstrates how the use of a number of traditional photographic measures can be modified and employed to quantify the perceptual loss in digital image quality and proposes a number of procedures to be followed in digitisation projects for the evaluation of digital reproductions of archiving material. The work was used by the National Library of the Netherlands for setting image digitisation standards (see esteem indicators). 4 citations in academic papers.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Journal article
Title:

Image quality comparison between JPEG and JPEG2000. I: Psychophysical investigation and II: Scene dependency, scene analysis, and classification

Journal title: Journal of Imaging Science and Technology

Month/year of publication: May 2007 **Pagination:** 248-270

Volume: 51(3)

ISSN: 1062-3701

DOI:

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Allen, E.

External author: No

2: Jacobson, R.E.

External author: No

Other relevant details:

Findings from Part I clearly answer the question: why 7 years after the publication of JPEG2000 (wavelet based) the new standard has not yet replaced the old JPEG compression scheme (DCT based). The theoretical component of the extensive Part 2 defines the long standing problem of scene dependency in subjective image quality measurements - more than 30 references are used for the purpose. Further experimental work helps in defining the relationship between image content and the visual quality of compressed images, a task which was never carried out before.

Output number: 4 **Output type:** Conference contribution
Title:

Effective Pictorial Information Capacity as an Image Quality Metric

Conference: Proceedings of SPIE: Image Quality and System Performance IV (SPIE/IS&T Electronic Imaging 2007), Volume 6494

Month/year of publication: 28/01/2007 **Number of pages:** 01-09

Media of output:

ISSN: 0277-786X

URL: <http://dx.doi.org/10.1117/12.703973>

DOI: 10.1117/12.703973

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors:

1: Jenkin, R.

External author: Yes

2: Richardson, M.

External author: Yes

Other relevant details:

This paper proposes an innovative image quality metric which models of the effective point spread function and image noise from images, and uses models of the eye's contrast sensitivity and noise, to predict the displayed image information perceived by human observers. Psychophysical experiments that employed 20 trained observers demonstrated that the metric successfully predicted human judgements of image quality. This publication demonstrates that a relatively simple but well designed image quality metric can successfully predict perceived image quality for a large variety of pictorial contents. This is a collaborative work between the University of Westminster and Canfield University.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Name: Winter, S.C.

Category: A

FTE: 1.00

Identifier: 7810831151296

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1 **Output type:** Conference contribution

Title:

Experiences with deploying legacy code applications as grid services using GEMLCA

Conference: Advances in grid computing (EGC 2005): European Grid Conference, Amsterdam, The Netherlands, February 14-16, 2005

Month/year of publication: 14/02/2005 **Number of pages:** 851-860

Media of output:

ISSN: 3540269185

URL: http://dx.doi.org/10.1007/11508380_87

DOI: 10.1007/11508380_87

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Additional authors: 3

Co-authors:

1: Goyeneche, A.

External author: No

2: Kiss, T.

External author: No

3: Terstyanszky, G.

External author: No

Other relevant details:

GEMLCA (Grid Execution Management for Legacy Code Architecture) is widely used in the academic community to run legacy code applications on the Grid. It migrates these applications to the Grid without re-engineering the source codes. The Westminster Grid Application Support Service (W-GRASS) uses GEMLCA to convert, deploy and run legacy coder applications on the Grid. Among others, the MadCity road traffic micro-simulation program; the Gamess-UK general purpose ab initio molecular electronic structure simulator program and the MultiBayes program which calculates the Monte Carlo chain sample of trees from DNA sequence were grid-enabled.

Output number: 2 **Output type:** Journal article

Title:

Non-functional oriented dynamic integration of distributed components

Journal title: Electronic Notes in Theoretical Computer Science

Month/year of publication: March 2003 **Pagination:** 405-418

Volume: 68(3)

ISSN: 1571-0661

URL: [http://dx.doi.org/10.1016/S1571-0661\(05\)80380-9](http://dx.doi.org/10.1016/S1571-0661(05)80380-9)

DOI: 10.1016/S1571-0661(05)80380-9

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Additional authors: 0

Co-authors:

1: Ribeiro-Justo, G.R.

External author: Yes

2: Saleh, A.

External author: No

Other relevant details:

New framework has been elaborated to represent and control the non-functional properties of distributed systems, in the context of integrating reusable components and customisable component-based middleware in the construction of distributed systems. The framework contains the Non-functional Interface Definition Language, the Non-functional Architecture Description Language, and the Management System. The framework defines the non-functional properties of the services at the early stages of design, and incorporating such properties within the architecture, to ease the process of managing the system at runtime.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Conference contribution
Title:

An open interface for parallelization of traffic simulation

Conference: Seventh IEEE International Symposium on Distributed Simulation and Real-Time Applications, October 23 - 25, 2003, Delft, The Netherlands

Month/year of publication: 23/10/2003 **Number of pages:** 158-163

Media of output:

ISSN: 0769520367

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 0

1: Igbe, D.

External author: No

2: Ijaha, S.

External author: No

3: Kalantery, N.

External author: No

Other relevant details:

New framework has been elaborated to represent and control the non-functional properties of distributed systems, in the context of integrating reusable components and customisable component-based middleware in the construction of distributed systems. The framework contains the Non-functional Interface Definition Language, the Non-functional Architecture Description Language, and the Management System. The framework defines the non-functional properties of the services at the early stages of design, and incorporating such properties within the architecture, to ease the process of managing the system at runtime.

Output number: 4 **Output type:** Conference contribution
Title:

Security mechanisms for legacy code applications in GT3 environment

Conference: Proceedings of the 13th Euromicro Conference on Parallel, Distributed and Network-Based Processing, Lugano, Switzerland, February 9-11 2005

Month/year of publication: 09/02/2005 **Number of pages:** 220-226

Media of output:

ISSN: 0769522807

URL: <http://dx.doi.org/10.1109/EMPDP.2005.38>

DOI: 10.1109/EMPDP.2005.38

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

Additional authors: 3

1: Delaitre, T.

External author: No

2: Goyeneche, A.

External author: No

3: Terstyanszky, G.

External author: No

Other relevant details:

To avoid re-engineering of legacy code, we developed the Grid Execution Management for Legacy Code Architecture (GEMLCA) that enables deployment of legacy code applications as Grid services. Security requirements are essential to any Grid application to preserve the confidentiality and integrity of data. To meet these requirements the GT3 security model was implemented in GEMLCA. The paper describes how Grid Security Infrastructure (GSI) components have been added to GEMLCA in order to enable secure execution of jobs in Grid. It also presents how a legacy code traffic simulator was transformed into a Grid service and gives some simulation results.

University of Westminster : 23 - Computer Science and Informatics
RAE 2008 : RA2 - Research outputs

Name: Xanthis, L.S.

Category: A

FTE: 1.00

Identifier: 8610831195505

Year of entry:

Research groups:

RA2 - Research outputs

Output number: 1

Output type: Journal article

Title:

Successive eigenvalue relaxation: a new method for the generalized eigenvalue problem and convergence estimates

Journal title: Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences

Month/year of publication: February

Pagination: 441-451

Volume: 457(2006)

2001

ISSN: 1364-5021

URL: <http://dx.doi.org/10.1098/rspa.2000.0674>

DOI: 10.1098/rspa.2000.0674

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Ovtchinnikov, E.

External author: No

Additional authors: 0

Other relevant details:

We present a new subspace iteration method, which we call successive eigenvalue relaxation (SER) --for the efficient computation of the generalised eigenvalue problem for symmetric positive definite operators. The following significant features render SER computationally attractive: (i) it can deal effectively with preconditioned large-scale eigenvalue problems (ii) its practical implementation can routinely accommodate sophisticated preconditioners designed to meet more exacting requirements (as for certain parameter-dependent problems of 3D thin elastic structures) (iii) it is supported by rigorous theoretical convergence estimates that are cluster robust, i.e. it can efficiently cope with the difficult cases of multiple and clusters of eigenvalues.

Output number: 2

Output type: Journal article

Title:

'Les fleurs du mal': an adaptive wavelet method of arbitrary lines I: convection-diffusion problems

Journal title: Comptes Rendus Mecanique

Month/year of publication: January 2004

Pagination: 23-29

Volume: 332(1)

ISSN: 1631-0721

URL: <http://dx.doi.org/10.1016/j.crme.2003.10.004>

DOI: 10.1016/j.crme.2003.10.004

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: X. Ren

External author: No

Additional authors: 0

Other relevant details:

We focus on the important class of singularly perturbed, convection-diffusion problems which model a diverse array of physical, chemical, biological and financial processes. We develop an adaptive methodology for such problems based on the method of arbitrary lines (mal) and wavelet approximation theory capable of resolving effectively and accurately the challenging class of convection-dominated problems exhibiting boundary and interior layers. We demonstrate the high accuracy of the adaptive wavelet-mal methodology on a challenging model problem in a general domain proposed at a specialist conference to test robustness of numerical methods. No other published method met the demands of the challenge.

University of Westminster : 23 - Computer Science and Informatics

RAE 2008 : RA2 - Research outputs

Output number: 3 **Output type:** Journal article

Title:

'Les fleurs du mal' II: a dynamically adaptive wavelet method of arbitrary lines for nonlinear evolutionary problems-capturing steep moving fronts

Journal title: Computer Methods in Applied Mechanics and Engineering

Month/year of publication: July 2006 **Pagination:** 4962-4970

Volume: 195(37-40)

ISSN: 0045-7825

URL: <http://dx.doi.org/10.1016/j.cma.2005.10.022>

DOI: 10.1016/j.cma.2005.10.022

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Ren, X.

External author: No

Additional authors: 0

Other relevant details:

We address the challenging question posed by the numerical solution of nonlinear multi-dimensional evolutionary PDEs over general domains in the presence of steep, shock-like moving fronts, exemplified by Burgers' equation. To tackle such problems we employ the method of arbitrary lines (mal) and some properties of wavelet approximation theory in the context of the arbitrary Lagrangian-Eulerian (ALE) formulation to develop a dynamically adaptive wavelet-based solver that is capable of capturing the anisotropic or multi-scale character of the steep moving fronts. We show the efficacy and high accuracy of the dynamically adaptive wavelet-mal methodology by numerical examples in two spatial dimensions.

Output number: 4 **Output type:** Journal article

Title:

On fast domain decomposition solving procedures for hp-discretizations of 3-d elliptic problems

Journal title: Computational Methods in Applied Mathematics

Month/year of publication: October 2003 **Pagination:** 536-559

Volume: 3(4)

ISSN: 1609-4840

URL: <http://cmam.info/issues/?Vol=3&Num=4&ItID=82>

DOI:

Is duplicate: No

Is interdisciplinary: No

Pending publication: No

Research group:

Co-authors:

1: Korneev, V.G.

External author: Yes

2: Langer, U.

External author: Yes

Additional authors: 0

Other relevant details:

We develop fast domain decomposition (DD) procedures to solve systems of algebraic equations resulting from the hierarchical hp discretisation of second-order elliptic problems in 3D. We adapt the wire basket sub-structuring technique to hierarchical hp discretisations and obtain a fast preconditioned solver for faces by the K-interpolation technique and show that a secondary iterative process may be used efficiently for prolongations from faces. We present almost optimal preconditioners-solvers for internal and face sub-problems and the DD algorithm as a whole and some modifications thereof. Finally we present theoretical estimates of the computational complexity with respect of h and p.
