

CURRICULUM VITAE

Dr Deshendran Moodley

Senior Lecturer, School of Mathematics, Statistics & Computer Science, University of KwaZulu-Natal, Durban, South Africa

EDUCATION

PhD Computer Science, University of KwaZulu-Natal, 2001-2009

Thesis title: Ontology Driven Multi-Agent Systems: An Architecture for Sensor Web Applications

MSc Computer Science, University of Natal Pietermaritzburg, 1995

Dissertation title: Artificial Neural Networks for Image Recognition: A study of feature extraction methods and an implementation for handwritten character recognition

BSc Honours Computer Science, University of Natal Pietermaritzburg, 1994

BSc Computer Science, University of Durban Westville, 1991 – 1993

DETAILED ACADEMIC AND EMPLOYMENT HISTORY

ACADEMIC EXPERIENCE

POSITION	Senior Lecturer in Computer Science
INSTITUTION	School of Mathematics, Statistics & Computer Science, Westville Campus, University of KwaZulu-Natal <i>Durban, South Africa</i>
DURATION	Jan 2005 – present

ROLES/DUTIES

- supervision of honours, masters and doctoral students
- research leadership, capacity development and establishment and management of strategic partnerships
- resource mobilisation and grant administration
- established and manage the Health Architecture Lab, an applied Computer Science research group in the School
- undergraduate and postgraduate course development and teaching in Computer Science
- administrative portfolios: faculty teaching and learning quality representative (2007), public relations coordinator (2006), member of the School board
- developed and ran a structured additional tutorial programme for first year Computer Science students (2004-2006)
- developed and initiated the masters programme in medical informatics, a joint programme between the Department of TeleHealth and the School of Computer Science
- research into health informatics, agent based systems, ontologies, bayesian networks and the sensor web

POSITION	Deputy Director
INSTITUTION	UKZN/CSIR Meraka Centre for Artificial Intelligence Research, School of Computer Science, Westville Campus, University of KwaZulu-Natal <i>Durban, South Africa</i>
DURATION	Oct. 2011 – Nov. 2012

ROLES/DUTIES

- formulated the concept and business case for the establishment of the Centre at UKZN
- establishment and launch of the Centre

- manage the activities of the UKZN node of the Centre
- formulating and operationalizing the strategic plan of the Centre
- resourcing and budgeting
- public relations, establishing and maintaining national and international partnerships and networks
- manage and direct the activities of the Health Architecture Lab, a research group in the Centre

POSITION Head of School
INSTITUTION **School of Computer Science, University of KwaZulu-Natal**
Durban, South Africa
DURATION Feb. 2008 – Jan. 2011

SKILLS SUMMARY Academic leadership, strategic planning, staff mentoring and development, management and interpersonal skills, human resources, finance and budgeting, student academic management, teaching and research

Provided overall leadership and management of the School of Computer Science. The School had two centres of operation 80km apart, one on the Pietermaritzburg and the other on the Westville campus. During my tenure the School comprised of 14-15 permanent academic and 6-8 temporary academic staff, 4 administrative and 6 technical staff. The School taught over 500 Computer Science students and 450 students taking basic Computing modules at the undergraduate level, 10-20 honours and 25 masters and doctoral students.

ROLES/DUTIES

- serve on Faculty and University leadership structures and committees
- to establish strategic research partnerships with national and international organisations and consortiums. Some of the partnerships that I facilitated/established during my term as Head include:
 - ICT4EO and KRR research groups, Meraka Institute, CSIR
 - DPSS group at CSIR
 - Centre for High Performance Computing
 - Medical Research Council and Jembi Health Systems
 - Masters exchange programme with Institute for Geoinformatics, University of Muenster, Germany,
 - South African Partnership with International research universities network (SAPIENT) Erasmus Mundus staff and postgraduate student mobility grant
 - Derivco, a large international software development company located in Durban

POSITION Lecturer
INSTITUTION **Department of Computer Science, University of Natal Durban**
Durban, South Africa
DURATION Mar. 2003 – Dec 2004

ROLES/DUTIES

- undergraduate course development and teaching in Computer Science
- supervision of projects for Computer Science honours students
- administrative portfolios: postgraduate & research coordinator (2003-2004), co-ordinating and managing the student demonstrators and the student demonstrator budget (2003-2004)
- developed and ran a structured additional tutorial programme for first year Computer Science students
- research into multi-agent systems

POSITION Senior Researcher (part time appointment)
COMPANY **Meraka Institute, Council for Scientific and Industrial Research (CSIR)**
Pretoria, 0001, South Africa

DURATION May 2007 – Dec. 2008

SKILLS SUMMARY Sensor Web, software agents, ontologies, web technologies, research methodologies, research supervision

DUTIES

Provided research guidance and supported human capital development activities on a monthly basis (average 2 days a month) within the ICT4EO research group. The group's research programme centred around technologies for the Sensor Web, i.e. a global computing infrastructure for publishing, accessing and processing earth observation data.

LECTURING EXPERIENCE

2003-current School of Computer Science, Westville Campus, University of KwaZulu-Natal Durban / University of Natal Durban

- first year Java programming courses: Introduction to Computer Science, Computing Fundamentals, Computer Programming
- additional tutorial programme for first year students
- Software Design, a final (3rd) year project course , where students worked in groups to design and develop an online learning system and learned to use design patterns for designing and implementing large scale systems
- honours courses on Ontologies and Knowledge Based Systems, and Medical Informatics
- Developed and coordinated a full-time masters programme in Biomedical Informatics in collaboration with the Department of TeleHealth. Taught the Medical Information Systems masters course

2004-2005 Department of TeleHealth, Medical School, University of KwaZulu-Natal Durban

Developed and lectured postgraduate courses for the Masters/postgraduate diploma in Medical Informatics in conjunction with UKZN Medical School, Harvard and MIT. Students attended on a part-time basis and ranged from a nurse, pharmacist, medical practitioners, managers in the health department and to a professor of medicine. The IT skills (programming background) ranged from beginner with no IT experience to expert:

- *Java programming*: 4 week compressed course, that covered most of the first year programming course in Computer Science with some additional topics
- *Advanced Java programming*: 2 week compressed course - building dynamic web sites using Java Server Pages (JSP) with a database backend
- *Open Source Software*: introduction to Linux and open source office software. Configuring and using an FTP and web server

2002 Department of Computer Science, University of Natal Durban

Lectured the computer literacy course to first year students, filled in for new lecturer for 1 month February 2002

2001 ML Sultan Technikon, Durban

Developed and lectured the Networking 4 course to Final Year BTech students. Included setting and marking the final examination, projects, tests and assignments

INDUSTRY EXPERIENCE

POSITION	C++ Programmer, Technical Manager, Director of Application Integration
COMPANY	DyDx Technologies , Honeydew, Johannesburg, SA / Systemsfusion Inc. World Trade Centre, Denver, Colorado, US
DURATION	Feb. 2000 - Jan. 2001
SKILLS SUMMARY	C++, gnu STL, roquewave STL, Corba, Python, Perl, Sun hardware, TCP/IP, Windows Terminal Server. Metaframe, Oracle 8i, Interbase, Mysql, RedHat Linux, Sun Solaris, Apache, Exim, Project Management, Team management

DUTIES

- managed the core programming team and application integration team and reported directly to the Chief Technical Officer. These teams comprised of between 4-5 programmers
- one of the lead c++ programmers using GNU gcc and the KAI compiler on Redhat Linux and sun solaris. Projects centred around development and maintenance of an ISP (internet service provider) provisioning and ASP (application service provider) product called Evolutionware™
- controlled and co-ordinated updates to the main software library with the aid of the cvs program
- responsible for central testing and final release of new versions of the software
- involved in high level design of new features and improvements to the product
- assumed position of Director of Application Integration - liaised with internet service vendors to investigate new internet applications for possible integration into Evolutionware™

POSITION	Senior NT Systems specialist in the FIDS NT server team
COMPANY	Credit Suisse First Boston , Canary Wharf, London
DURATION	Feb. 1999 - Sept. 1999

SKILLS SUMMARY Windows NT 4.0 server, DHCP, WINS, TCP/IP, Perl, Compaq hardware, Compaq Insight Manager, Visual C++,

DUTIES

- Windows NT systems specialist in fixed income and derivatives team (trading floor users)
- planning and integration of new applications and infrastructure for the trading floor users
- escalation for 2nd line IT staff on the trading floor
- co-ordination of teams for IT crisis management on the trade floor
- certification, integration and daily maintenance of windows NT servers in large NT environment +/- 150 NT servers
- NT infrastructure management including DHCP, WINS in a multiple master domain
- perl and batch scripting for automatic system jobs
- developed basic visual c++ network management tools

POSITION NT Systems specialist in the NT server team
COMPANY **Dresdner Kleinwort Benson on behalf of SHL**, *Riverbank House, London*
DURATION Aug. 1998 - Dec. 1998
SKILLS SUMMARY Windows NT 4.0 server, DHCP, WINS, TCP/IP, Perl, Novell netware 3.12, Compaq hardware, Compaq Insight Manager

DUTIES

- Windows NT systems specialist in server management team
- certification, integration and daily maintenance (3rd line support) of windows NT servers in large NT environment +/- 450 NT servers
- NT infrastructure management including DHCP, WINS in a multiple master domain
- perl and batch scripting for automatic system jobs
- participated in DKB NT infrastructure and server migration project to new premises at Riverbank House.

POSITION Systems specialist
COMPANY **Seagram Spirits & Wines Group**, *The Ark, Hammersmith, London*
DURATION Sep.1997 - May 1998
SKILLS SUMMARY Windows NT 4.0 & NT 3.51 server, winframe citrix 1.6/1.7, Oracle 7.3.2 & 7.3.3 for NT, Perl, Novell, Unix, Compaq insight manager

DUTIES

- Windows NT systems specialist in global operations for Europe and Africa, main point of contact for daily NT server problems
- design, implementation, integration and maintenance of windows NT servers in WAN/LAN environments
- design and implementation of backup strategy for oracle databases on NT platform
- design, implementation and integration of winframe citrix 1.6/1.7 servers with oracle databases
- perl scripting for automatic system jobs
- consulted on global NT domain project involving master domain located in the US and three resource domains namely americas, europe/africa, asia - pacific, to enable single logon for all global resources. This included implementation of WINS, DNS and DHCP in a TCPIP environment
- implemented intranet for system support documents using Internet Information Server 3

POSITION Unix systems administrator
COMPANY **Londis Holdings Ltd, Hampton Hill**
DURATION 21 Aug. 1997 - 1 Sep. 1997
SKILLS SUMMARY HP UX 9/10

DUTIES

- Unix systems administration on 3 HPUX boxes running HPUX 9 using LVM and running an informix database. Filled in for IT support manager/ resident administrator for a week.

POSITION Technical Consultant
COMPANY **Computer Management (Pty) Ltd**
 HP resellers/consultants, Durban, South Africa
DURATION Feb. 1996 - Jul. 1997
SKILLS SUMMARY Team management, NT server/workstation 3.51, 4.0, citrix 1.6 on HP netserver, wininstall, HPUX 10.01, 10.20 on HP K250/2 PC Solaris, unix shell scripting, ksh, awk, grep, Perl, SQL programming, Oracle 7.2 database, netscape gold, internet assistant for word, html writing, MS office.

DUTIES

- infrastructure design and planning, rollout and administration of NT3.51/4.0 workstation and server.
- managed a team of three support staff for daily PC support
- evaluation and feasibility studies of new products and tools
- consulted at external clients such as Petronet and Durban Electricity
- assisted with HP UX and Solaris administration in an oracle client/server environment: 200 NT 4.0 and sun solaris PC clients running health care applications accessing a 20 gig oracle database on an HP K250/2 with HPUX 10.20.

RESEARCH VISITS

University of Muenster, Germany, Sep. 11 – Oct. 11, visiting academic in the Sensor Web & Simulation Lab, Institute for Geoinformatics, research in the Sensor Web and initiated a joint research project to develop a low cost unmanned aerial vehicle (UAV) surveillance platform, hosted by Dr Christoph Brox and Dr Theodor Foerster, visiting staff scholarship via an Erasmus Mundus SAPIENT

University of Edinburgh, UK, Apr. 11 – Jun. 11, visiting academic in the Machine Vision Unit, Institute of Perception, Action and Behaviour (IPAB), School of Informatics, research in knowledge representation in cognitive vision systems and worked on the Fish4K EU-FP7 project, hosted by Prof. Bob Fisher

Massachusetts Institute of Technology (MIT), USA, Dec. 04 – Jan. 05, visiting academic in the Clinical Decision making group in the Computer Science and Artificial Intelligence Lab, (CSAIL), via the NIH ITGH programme, hosted by Prof. Peter Szolovitz and Dr Hamish Fraser, staff scholarship provided by the NIH ITGH grant on Medical informatics

Meraka Institute, CSIR, Pretoria, South Africa, Dec. 05 – Jan. 06, visiting scientist in the ICT4EO group, research in ontology and agent based architectures for wildfire detection from satellite imagery, hosted by Mr Andrew Terhorst, Research Group Leader, ICT4EO group

RESEARCH GRANTS & FUND RAISING

I have initiated/participated in the following grants. Amounts shown indicate funds that I have received or expect for my participation/role in each grant

1. May 2011 – Apr 2016, UKZN/CSIR Meraka Centre for Artificial Intelligence Research (CAIR), Raised research funding of ± R 6 million (R 1.2 m x 5 years) from CSIR Meraka and R 5.2 million (R 1.04 m x 5 years) from UKZN. Deputy Director and principal driver behind the creation of the Centre.
2. Dec. 2010 – Nov 2013 To establish a Health Enterprise Architecture Lab (HEAL) in the School of Computer Science, UKZN. \$ 850 000, Rockefeller Foundation and the Canadian International Development Research Centre (IDRC). Principal Investigator.
3. 2011-2014 SAPIENT: South African Partnership with International research universities network, European Union, Erasmus Mundus mobility grant for staff, PhD and masters student visits to selected European universities, Total funding of € 1.588.100 for 70 mobility scholarships, UKZN received funding for local organisation and full travel and stipend for staff and students. Principal driver and coordinator for UKZN's participation in the programme.
4. 2010-2012 Earth Observation and ENVironmental modelling for the mitigation of HEALth risks (EO2HEAVEN) (FP7-244100). European Union Framework 7 Programme. I estimate my participation to be funded at a minimum of R 50 000 per year

5. 2009-2011 Masters exchange programme, Institute for Geoinformatics (IFGI), University of Muenster, Germany, Funding for UKZN Computer Science students provided by Northrhine-Westphalian Ministry for Innovation, Science, Research and Technology, covers travel and health insurance and €850 per month, 2 students per year for 1 semester (5 months)
6. 2007-2009 OASIS grant for Medical Informatics, International Development Research Centre (IDRC) Canada and the Medical Research Council, Developing Open Architecture, Standards and Information Systems (OASIS) for Healthcare in Africa, R 100 000 + Travel costs, student stipends/bursaries
7. 2005 SUKAR grant via UND, Curriculum development for establishing an additional instruction programme for first year Computer Science students, R 30 000
8. 2005-2006 NRF Thuthuka Grant, National Research Foundation, R 49 000
9. 2005- 2007 Participated in Fogarty NIH grant to develop and teach a masters programme in Medical Informatics at UKZN.
10. 2003 - 2004 University Research Fund (URF) Grant, University of Natal, R 20 000

PROFESSIONAL DUTIES

Directorships

1. 2009 – present: Non-Executive Director – Jembi Health Systems, <http://www.jembi.org>
Jembi is a Not for Profit Organization focused on the furthering of Computer/IT based healthcare solutions for the developing world. It currently has over 40 staff with operations in South Africa, Mozambique, Rwanda and Zimbabwe

Reviewer: peer reviewed Journals

1. 2012, International Journal of Remote Sensing
2. 2010,2011,2012 IEEE Journal of Selected Topics in Earth Observations and Remote Sensing Editorial Office
3. 2010 International Journal of Healthcare Technology and Management (IJHTM)
4. 2010 South African Computing Journal

Reviewer: peer reviewed conferences and workshops

1. Sub reviewer: 25th Australasian Joint Conference on Artificial Intelligence, 4-7 December 2012
2. Foundations of Health Information Engineering and Systems - FHIES 2012, FHIES 2013.
3. 7th *IEEE* International Workshop on *Engineering Semantic Agent Systems*, 2012
4. International Workshop on Semantic Sensor Networks, SSN 2012, SSN 2013
5. The 7th IEEE International Workshop on Engineering Semantic Agent Systems (ESAS), July 16-20, 2012
6. Integrating Sensor-Web and Web-based Geoprocessing (ISW) Workshop at the AGILE Conference on GI Science - April 2011
7. IEEE AFRICON 2011 Special Session on Robotics and Artificial Intelligence in Africa
8. Australasian Ontology Workshop: AOW 2007, AOW 2009, AOW 2010, 2012
9. Knowledge Representation Ontology Workshop (KROW 2008)

Membership of research committees and working groups

1. Steering committee, International Symposium series of Foundations for Health Information and Engineering Systems (FHIES), <http://www.iist.unu.edu/www/workshop/FHIES/>, since September 2011
2. Member of the scoping group, United Nations international masters in health informatics, Attended the first scoping workshop, 19-20 March 2012, Macau, China
3. Member of the Interoperability and Standards (I&S) Working Group of the National ICT4Health/eHealth Stakeholder Forum, convened by Deputy Minister of Health, Dr Ramokgopa, since April 2012

- Reference group member, WRC project K5/1753: Land-Water Linkages: Agent-based modeling of land use change and its impact on water, 2007 – 2010

Other reviewer duties

- Reviewer for NRF rating: Professor in Computer Science (2012), Senior researcher (2010)
- Grant reviewer for the Netherlands Foundation for Science for Global Development (WOTRO), 2011

Examiner - Postgraduate

- Z Khan – MSc Computer Science, School of Mathematics, Statistics and Computer Science, University of KwaZulu-Natal, Foundational Ontology Interchangeability with the Repository of Ontologies for MULTiple Uses (ROMULUS), 2013
- N Vawda – MSc Computer Science, School of Computer Science, University of KwaZulu-Natal Face recognition with Eigenfaces - A detailed study, 2012
- A Ragalo, MSc Computer Science, School of Computer Science, University of KwaZulu-Natal, An analysis of algorithms to estimate the characteristics of the underlying population in Massively Parallel Pyrosequencing data, 2011
- WJ Kuyler – MTech, A multi-agent system for administering the prescription of anti-retroviral and anti-TB drugs, School of Information Technology, Central University of Technology, 2008
- MC Sello, Masters (Information Technology), mini dissertation, Department of Computer Science, University of Cape Town, 2007
- K O'Neill, MSc Computer Science, School of Computer Science, University of KwaZulu-Natal, Relieving the Cognitive Load of Constructing Molecular Biology Ontology Based Queries by means of Visual Aids, 2007
- R Jimenez, MSc Computer Science, School of Computer Science, University of KwaZulu-Natal, Vector Graphics to improve BLAST graphic representations, 2007

External examiner - Undergraduate

- 2005-2007 Technical Programming, a module in the B. Tech. Information Technology programme, School of Information Technology, Central University of Technology

RESEARCH OUTPUT & ACTIVITIES

See Google scholar profile (Deshendran Moodley) for citation counts

Peer reviewed journal papers and book chapters

- Coetzer W, **Moodley D** & Gerber A (2013), A Case-Study of Ontology-Driven Semantic Mediation of Flower-Visiting Data from Heterogeneous Data-Stores in Three South African Natural History Collections, in Philipp Cimiano; Miriam Fernández; Vanessa Lopez; Stefan Schlobach & Johanna Völker, ed., 'The Semantic Web: ESWC 2013 Satellite Events: Revised Selected Papers', Lecture Notes in Computer Science Volume 7955, pp. 87-100.
- Crichton R, **Moodley D**, Pillay A, Gakuba R, Seebregts C (2013), An Architecture and Reference Implementation of an Open Health Information Mediator: Enabling Interoperability in the Rwandan Health Information Exchange. In: Foundations of Health Information Engineering and Systems, Revised and Selected Papers, Lecture Notes in Computer Science Volume 7789, pp. 87-104.
- Moodley D**, Simonis, I and Tapamo J (2012), An architecture for managing knowledge and system dynamism in the worldwide Sensor Web. International Journal of Semantic Web and Information Systems: Special issue on Semantics-enhanced Sensor Networks, Internet of Things and Smart Devices; 8(1), pp. 64-88
- Moodley D**, Pillay A & Seebregts CJ (2012), Position Paper: Researching and Developing Open Architectures for National Health Information Systems in Developing African Countries, Revised and Selected Papers, Foundations of Health Informatics Engineering and Systems, Lecture Notes in Computer Science Volume 7151, pp. 129-139
- Terhorst A, **Moodley D**, Simonis I, Frost P, McFerren G, Roos S and van den Bergh F (2008), Using the Sensor Web to Detect and Monitor the Spread of Vegetation Fires in Southern Africa, in Geosensor Networks, Lecture Notes in Computer Science, Volume 4540, Springer-Verlag, pp. 239-251.

6. Fraser HSF, Biondich P, **Moodley D**, Choi S, Mamlin BW, Szolovits P (2005), "Implementing electronic medical record systems in developing countries", *Informatics in Primary Care* 2005;13, PHCSG, British Computer Society, pp. 83–95.

Peer reviewed conference and workshop papers

1. Mudaly T, **Moodley D**, Seebregts CJ & Pillay A (to appear in 2013) Architectural Frameworks for Developing National Health Information Systems in Low and Middle Income Countries. Proceedings of the First IEEE International Conference on Enterprise Systems (ES 2013), Cape Town, South Africa, 7-8 November 2013.
2. Brandt P, **Moodley D**, Pillay A, Seebregts CJ and de Oliveira T (2013), An Investigation of Classification Algorithms for Predicting HIV Drug Resistance Without Genotype Resistance Testing, in Gibbons J and Hall W (Eds.) Pre-Proceedings of the 3rd Intl Symposium on the Foundations of Health Information Engineering and Systems - FHIES 2013, Macau, August 21-23 2013.
3. **Moodley D**, Seebregts CJ, Pillay A and Meyer T (2013), An ontology-driven modeling platform for regulating eHealth interoperability in low resource settings, in Gibbons J and Hall W (Eds.) Pre-Proceedings of the 3rd Intl Symposium on the Foundations of Health Information Engineering and Systems - FHIES 2013, Macau, August 21-23, 2013.
4. Coetzer W, **Moodley D**, Gerber A (2013), A Case-Study of Ontology-Driven Semantic Mediation of Flower-Visiting Data from Heterogeneous Data-Stores in Three South African Natural History Collections. In: S4BioDiv 2013. Semantics for Biodiversity. Proceedings of the first international Workshop on Semantics for Biodiversity. May 27, 2013, Montpellier, France, CEUR Workshop Proceedings. Vol 979 (Best paper award).
5. Crichton R, **Moodley D**, Pillay AW, Gakuba R & Seebregts CJ (2012), An Interoperability Architecture for the Health Information Exchange in Rwanda, in I. Perseille and J H. Weber-Jahnke (Eds.) Pre-Proceedings of the 2nd Intl Symposium on the Foundations of Health Information Engineering and Systems - FHIES 2012, Paris, August 27-28, 2012. (to appear in the Lecture Notes in Computer Science series)
6. **Moodley D** and Tapamo JR (2011), A semantic infrastructure for a Knowledge Driven Sensor Web. In Semantic Sensor Networks Workshop, Proceedings of the 4th International Workshop on Semantic Sensor Networks 2011 (SSN11) Bonn, Germany, 23 October 2011, A workshop of the 10th International Semantic Web Conference (ISWC 2011).
7. **Moodley D**, Pillay AW, and Seebregts CJ (2011), Position Paper: Researching and Developing Open Architectures for National Health Information Systems in Developing African Countries, in Z. Liu and A. Wassyn (Eds.) Foundations of Health Information Engineering and Systems, FHIES 2011, First International Symposium, 29-30 August 2011, Johannesburg, South Africa.
8. Van Zyl TL, Parbhoo C, **Moodley D**, Cwela B, Umuhoza D, Shabangu P and Vahed A (2009), IT infrastructure enabling open access for flood risk preparedness in South Africa, Proceedings of the 6th International ISCRAM Conference, 10-13 May 2009, Göteborg Sweden.
9. Simonis I, Vahed A and **Moodley D** (2009), Integrated risk management in South Africa: between technological features and organisational reality. Information Society Technologies (IST) Africa, 6-8 May, 2009, Uganda.
10. **Moodley D** and Simonis I (2006), A new architecture for the sensor web: the swap-framework. In Semantic Sensor Networks Workshop, A workshop of the 5th International Semantic Web Conference ISWC 2006, November 5-9, Athens, Georgia, USA. (*45 citations Google scholar*)
11. **Moodley D**, Terhorst A, Simonis I, McFerren G, and van den Bergh F (2006), Using the sensor web to detect and monitor the spread of wild fires. In Second International Symposium on Geo-information for Disaster Management (Gi4DM), 25-26 September 2006. (*10 citations Google scholar*)
12. **Moodley D** and Kinyua JDM (2006), Towards a multi-agent infrastructure for distributed internet applications. In 8th Annual Conference on WWW Applications, 5-6 September, 2006, Bloemfontein, South Africa.
13. **Moodley D** (2004), The future of the Internet: The Semantic Web, Web services and a multi-agent system infrastructure for the Internet, Proceedings of the South African Computer Lecturers Association, 4-6 July 2004, Durban.
14. **Moodley D**, Kinyua J (2003), A multi-agent system for electronic job markets in Abramowicz W, Klein G (eds), Proceedings of the 6th International conference on Business Information Systems, Colorado Springs, USA, 4-6 June 2003, published by Dept. of Management Info. Systems, The Poznan University of Economics, Poznan, pp. 42-48.

Scientific magazine articles and newsletters

1. **Moodley D**, Vahed A, Simonis I, McFerren G and Van Zyl T (2008). Enabling a new era of Earth observation research: scientific workflows for the Sensor Web. *Ecological Circuits* (1), pp. 20-23. Available online: <http://www.eepublishers.co.za/view.php?sid=15047>.
2. **Moodley D**, Chuntharpursat A (2007). Using ontologies to manage ecological data, SAEON newsletter, April 2007, Available online: <http://www.saeon.ac.za/enewsletter/archives/2007/april-2007/using-ontologies-to-manage-ecological-data>

Invited speaker, plenary sessions and discussion panels

1. Panel Discussion on Global Health Care Challenges and the Impact of ICT. Panelists: Gerry Douglas, Syed Aljunid, **Deshendran Moodley**, Zhiming Liu, 2nd Intl Symposium on the Foundations of Health Information Engineering and Systems - FHIES 2012, Paris, August 27-28, 2012.
2. **D. Moodley**, AW Pillay, and CJ. Seebregts: "The Health Enterprise Architecture Laboratory" A presentation given at the "Workshop to Develop Specifications and an Implementation Roadmap for an Open Semantic Interoperability Platform for Wireless Devices Supporting Mobile, Electronic and Tele- Health Applications" Makaranga Lodge, Durban, South Africa on the 23-24 August 2011.
3. **D. Moodley**, CJ Seebregts; HEAL: Establishing a Health Enterprise Architecture Lab in Africa, invited speaker: International Plenary Session Enabling Healthy Outcomes: Views from across the Globe, eHealth 2011, May 29 – June 1, Toronto, Ontario
4. **Moodley D**. Using ontologies to facilitate data and knowledge sharing in large-scale, distributed and heterogeneous information environments, Invited speaker at National Biodiversity Information Management Workshop 6-7 Nov. 2007.
5. **Moodley, D**. Agents for the Sensor Web? The Sensor Web Agent Platform, Invited speaker at 2nd South African International Workshop on Sensor Web Enablement, 5-6 February 2007, Breakwater Lodge, Victoria and Alfred Waterfront, Cape Town.

Other conference presentations, abstracts & posters

6. **Moodley D**, Pillay A, and Seebregts CJ, Developing computer science capacity to design effective national health information systems in developing African countries, Cape Town, South Africa, 12-13 September 2012
7. Crichton R, **Moodley D**, Pillay A, Gakuba R and Seebregts CJ, A health information mediator for the Rwandan health information exchange, Cape Town, South Africa, 12-13 September 2012
8. Seebregts C, Gakuba R, Pastore R, Walker M, Fourie C, Campione A and **Moodley D**, Implementation-Driven Health Enterprise Architecture Framework for Low Resource Settings, Cape Town, South Africa, 12-13 September 2012
9. **Moodley D**, Researching and Developing Open Architectures for National Health Information Systems in Developing African Countries. Presentation at the ifgi GI Forum, Munster, Germany. 18 October 2011.
10. AURORA Gerber, Thomas Meyer, Chris Seebregts, Arina Britz, Laurette Pretorius, Ronell Alberts, **Deshen Moodley**. The Integration of SNOMED CT into the OpenMRS Electronic Medical Record System Framework. Poster in Proceedings of the 3rd Knowledge Representation in Medicine Conference (KR-MED'08), Phoenix, Arizona, USA, May 31 - June 2, 2008.
11. Seebregts CJ, Mars M, **Moodley D**, Fraser HSF, Human SP, Fourie C, Singh Y, Hajek M, Pillay W, Tapamo J-R, Murrell H, de Oliveira T, McGrath D and Bennish ML. Biomedical Informatics Training in South Africa. Presentation at the Health Informatics in Africa conference, Bamako, Mali, January 2007.
12. Parbhoo, C and **Moodley, D**. Knowledge-based system for the detection and classification of unplanned human settlements. Poster at 4th IFIP Summer School Workshop Gordon's Bay, South Africa, 26-30 March 2007, pp 1-4.
13. Terhorst A, Simonis I, **Moodley D**, A service-oriented multi-agent systems architecture for the sensor web, SAEON Summit 2006, Centurion, South Africa, 2006.

POSTGRADUATE SUPERVISION

Current PhD students

Primary supervisor

1. Ms Sue Price, Agent based optimization and simulation in the sugar industry, since 2011
2. Mr Willem Coetzer, An ontology driven approach for integrating and accessing biodiversity data: A case study to manage South African bee specimen records, since 2012.
3. Mr Olukunle Ogundele, An information and decision making architecture for public health information systems in developing countries, since 2012.

Co-supervisor

1. Mr Gavin Rens, From an Agent Logic to a Robot Programming Language, Primary supervisor: T. Meyer, since 2010.
2. Mr Kodylan Moodley, Tractable ontology repair for inexpressive description logics, Primary supervisor: T. Meyer, since 2011.

Completed masters students

Primary supervisor

1. Maldean Pillay, Gabor Filter Parameter Optimization for Multi-textured Images: A Case Study in Water Body Extraction from Satellite Imagery, awarded June 2012
2. Chetna Parbhoo (with distinction), MSc Computer Science, An ontology-driven Sensor Web application for detecting and classifying informal settlements, 2009
3. Yashik Singh (with distinction), mini dissertation, MMedSci Medical Informatics, Computer-based machine learning algorithms to assist with the analysis and interpretation of genetic sequence data in patient s failing anti-retroviral therapy, 2008 (co-supervisor M Hajek)

Co-supervisor

1. Kodylan Moodley (with distinction), Debugging and Repair of Description Logic Ontologies, 2011 Supervisor: T Meyer, co-supervisors: I Varsincak, D Moodley

Current MSc students

Primary supervisor

1. Yerdashin Padayachi, Monitoring air pollution using satellite imagery: A case study in the South Durban region, since 2011
2. Pascal Brandt, A public health clinical decision support system: A case study for predicting HIV treatment failure, since July 2011
3. Bright Dodo, Service oriented architectures for health care in low resource settings: A case study in Zimbabwe, since July 2012
4. Lizwe Mdakane, Extended Local Binary Patterns Features for Improving Settlement Type Classification of Satellite Imagery, since March 2013

Co-supervisor

5. Ryan Crichton, An interoperability architecture for national health information systems: A case study in Rwanda, Primary supervisor: A Pillay, since July 2011.
6. Sagree Singh, An enterprise architecture framework for developing national health information systems in developing countries, since July 2012
7. Hendrina Harmse, Primary Requirements Validation based on the Testing of the Mathematical Formalization of UML Class Diagramssupervisor: K Britz, since July 2012.

Honours projects

1. Futerman D, Ontologies as Interoperability and Data Mining Tools in HIV and TB Clinical Information Systems, 2008
2. Lalla D, Autonomous Exploration of an Unknown Environment Using the Lego NXT Mindstorms Robot, 2008

3. Naicker T, Discovering Structure In Text Documents Text And Natural Language Processing, 2006
4. Singh Y, The Use Of Text Mining And Concept Matching Tools To Extract Relevant Content From Medical Document Database, 2005
5. Meekin N, Using the multi-agent system infrastructure for the Internet (MASII) development platform, 2005
6. Govender S, Electronic property market using MASII, 2005