

Curriculum Vitae of Catharina Maria Keet

January 10, 2012

Current position

Senior Lecturer
School of Mathematics, Statistics, and Computer Science
University of KwaZulu-Natal
Westville Campus (Block H1, level 3)
Durban
South Africa

Personal Particulars

Surname	Keet
Names	Catharina Maria (Marijke)
Email	keet at ukzn.ac.za
Homepage	http://www.meteck.org
Date of birth	8 December 1973
Nationality	EU citizen

Education

PhD Computer Science (INF/01)	<i>KRDB Research Centre, Faculty of Computer Science, Free University of Bozen-Bolzano, Italy. Thesis: "A Formal Theory of Granularity". 1-'05/12-'07 and successfully defended in public on 28-4-2008.</i>
Research student	<i>Database and Object Systems Group, School of Computing, Napier University, Edinburgh, Scotland, 10-'03/9-'04. Research focus: development and integration of (bio/eco-) ontologies. Included a visit to the <i>Laboratory of Applied Ontology (LOA-CNR)</i>, Trento, Italy (funded by the LOA); Research focus: the ecological niche, 3-'04/6-'04.</i>
BSc(Hons.) IT and Computing	<i>Department of Mathematics and Computing, Open University UK, 2-'01/3-'04. Graduated with 1st Class distinction. Thesis topic: conceptual modelling (ER and ORM) and design of an applied microbiology relational database.</i>
MA Peace & Development Studies	<i>Department of Government and Society, University of Limerick, Ireland, 9-'02/12-'03. Graduated with a 1st class Honours. Dissertation topic: Terrorism and Game Theory.</i>
MSc Microbiology (via BSc Food Science)	<i>Wageningen University and Research centre, the Netherlands, 9-'92/1-'98. Full title of the degree: 'MSc Food Science, free specialisation'. Areas of the three theses: food microbiology, molecular ecology of microorganisms, applied philosophy. Graduated: 1-'98.</i>

Vocational training

Associate Diploma Course Interior Design ASE LAN	Portobello School Dublin/Rhodesc International, 2-'00/11-'00. Portobello School Diploma in Interior Design Studies: distinction. Rhodesc certification: distinction. Accredited Systems Engineer Local Area networks, Compaq, Dublin. Certified in 1-'00.
ASE NT	Accredited Systems Engineer NT and Accredited Compaq Technician (Desktop & Notebook + Server), Compaq, Dublin. Certified in 10-'99.
ITIL	Foundation Certificate in IT Service Management, Stichting Exin, Utrecht, the Netherlands, 6-'99.
MCSE	Full-time international course Microsoft Certified Systems Engineer at the Computerij Onderwijs B.V., Enschede, the Netherlands, 5-'98/9-'98. Electives: TCP/IP and Exchange Server 5.0. Certified in 9-'98.
Other courses	Fibre Channel, comprehensive introduction to FC, in-depth AL and in-depth fabric, Solution Technology, Dublin, 2-'01; WAN technologies, Compaq, Dublin, 4-'00; Fibre Channel/Clustering Solutions Course, Compaq, Dublin, 3-'00; Unix systems management & concepts, AT Computing, Utrecht, the Netherlands, 7-'99; Unix introduction and administration, AT Computing, Utrecht, the Netherlands, 4-'99.
Preparatory Scientific Education	VWO, Strabrecht College Geldrop, the Netherlands, 9-'86/6-'92. Graduated: 6-'92.

Employment and work experience

Senior Lecturer	<i>School of Mathematics, Statistics, and Computer Science, University of KwaZulu-Natal, Durban, South Africa, 1-'11/present.</i> Activities: research on logic-based knowledge representation, Semantic Web, (bio-)ontologies, granularity, and conceptual data modelling; course development, teaching and student thesis supervision; organisational activities, reviewing, and administrative duties.
Assistant Professor	<i>Ricercatore a Tempo Determinato, KRDB Research Centre, Free University of Bozen-Bolzano, Italy, 2-'08/1-'11.</i> Activities: (i) research on logic-based knowledge representation in the scope of the Semantic Web focussed on bio-ontologies, granularity, conceptual modelling, and realisation of Ontology-Based Data Access; (ii) teaching, such as MSc course development and teaching, student supervision, and tutorials at summer schools; (iii) organisational activities, including coordinator KRDB seminars, reviewing, and exam committee memberships; (iv) initiation, coordination and research of the project to realise OBDA for horizontal gene transfer.
Research Assistant	<i>CoCoCo/CoCoPro, KRDB Research Centre, Free University of Bozen-Bolzano, Italy, 10-'04/12-'04, 5-'05, 3-'06, and 1-'08.</i> Activities: investigation into logic-based knowledge representation in the scope of the Semantic Web, focussed on bio-ontologies.

- Systems Engineer** Employee *Eurologic Systems*, Dublin, Ireland, 6-'00/1-'02.
7-'01/1-'02: Systems Integration Test Engineer, R&D department. Activities: Developing and implementing test plans for the integration testing of the 2 Gb Storage solutions (RAID in SAN/NAS), contributed to bug resolution. Contributed to the phase 1 and 2 exits of the iSCSI converter development. Involvement in the customisation, support, and training (at engineering level) for one of the major OEMs.
6-'00/6-'01: Systems Qualification Engineer. Activities: Developing and implementing qualification test plans for the integration testing of the 1 Gb Fibre Channel storage solutions (firmware and software focussed on the RAID solutions). Contributed to bug resolution by interacting with our Product Development Departments (R&D) and suppliers. Configurations includes SANs, NAS and operating systems NT, Win2k, Red Hat Linux and NetWare. Use of in-house and proprietary analysis & debugging tools and management software.
- Enterprise Support Engineer** In the German Enterprise Team, *Compaq Computer Corporation EMEA*, Dublin, Ireland, 8-'99/5-'00.
Activities: Troubleshooting problems and providing solutions for large business environments. Development and maintenance of the intranet-site of Engineering Support and EMEA Enterprise Support, and Minilab manager Enterprise level.
- Network Administrator** Employee *Brunel IT*, Amersfoort, the Netherlands, 11-'98/7-'99. Outsourcing projects:
2-'99/7-'99: Project Employee Network dept./IT Support, Centraal Beheer, the Netherlands. Activities: Co-organization of the Electronic Software Distribution project via Tivoli, installation of its test environment and performance analysis. Process development for implementing applications, problem analysis of the Helpdesk.
11-'98/1-'99: OS/2 LANManager, Centraal Beheer, the Netherlands. Activities: Rearranging and structuring the file servers and setting up structured Access databases, investigation w.r.t. domain separation.
- Project researcher** Food science/human physiology at the *Centro Internacional de la Papa (CIP)* in Lima, Peru, 7-'96/1-'97.
Activities: developed and implemented test protocols for *in vitro* digestibility of sweet potato, organized lab equipment and chemicals.

Publications

Book chapters

1. Keet, C.M. Ontology-driven formal conceptual data modeling for biological data analysis. In: *Biological Knowledge Discovery Handbook: Preprocessing, Mining and Postprocessing of Biological Data*. Mourad Elloumi and Albert Y. Zomaya (Eds.). Wiley. (in print)
2. Keet, C.M. A top-level categorization of types of granularity. In: *Novel Developments in Granular Computing: Applications for Advanced Human Reasoning and Soft Computation*. JingTao Yao (Ed.). IGI Global. 2010. pp81-117.
3. Artale, A. and Keet, C.M. Essential, mandatory, and shared parts in conceptual data models. In: *Innovations in Information Systems modeling: Methods and Best Practices*. IGI Global,

Advances in Database Research Series, Halpin, T.A., Proper, H.A., Krogstie, J. (Eds.). 2008. pp17-52.

Journal articles

1. Keet, C.M. Transforming semi-structured life science diagrams into meaningful domain ontologies with DiDON. *Journal of Biomedical Informatics*. (accepted)
2. Keet, C.M. The granular perspective as semantically enriched granulation hierarchy. *International Journal of Granular Computing, Rough Sets and Intelligent Systems*, 2011, 2(1): 51-70.
3. Keet, C.M. Dependencies between Ontology Design Parameters. *International Journal of Metadata, Semantics and Ontologies*, 2010, 5(4): 265-284.
4. Keet, C.M., Artale, A. Representing and Reasoning over a Taxonomy of Part-Whole Relations. *Applied Ontology – Special Issue on Ontological Foundations for Conceptual Models*, 2008, 3(1-2): 91-110.
5. Keet, C.M. Biological Data and Conceptual Modelling Methods. *Journal of Conceptual Modeling*, Issue 29, October 2003.
6. Keet, C.M. Democracy in the European Union. *UL Perspectives, Journal of Political Studies*, 2003, 2: 71-80.

International Conference and Workshop papers

1. Keet, C.M. Rough Subsumption Reasoning with rOWL. *SAICSIT'11*, Cape Town, October 3-5, 2011. ACM Conference Proceedings, 133-140.
2. Keet, C.M. Enhancing Identification Mechanisms in UML Class Diagrams with Meaningful Keys. *SAICSIT'11*, Cape Town, October 3-5, 2011. ACM Conference Proceedings, 283-286.
3. Keet, C.M. Bottom-up ontology development reusing semi-structured life sciences diagrams. *AFRICON'11 – Special Session on Robotics and Artificial Intelligence in Africa*, Livingstone, Zambia 13-15 September, 2011. IEEE (in print).
4. Keet, C.M. The use of foundational ontologies in ontology development: an empirical assessment. *8th Extended Semantic Web Conference (ESWC'11)*, G. Antoniou et al (Eds.), 29 May - 2 June 2011, Heraklion, Crete, Greece. Springer, Lecture Notes in Computer Science LNCS 6643, 321-335.
5. Keet, C.M. and Artale, A. A basic characterization of relation migration. *International Workshop on Fact-Oriented Modeling (ORM'10)*, Hersonissou, Crete, Greece, October 27-29, 2010. Meersman, et al (Eds.), *OTM Workshops*, Springer, Lecture Notes in Computer Science LNCS 6428, 484-493.
6. Keet, C.M. Ontology engineering with rough concepts and instances. *17th International Conference on Knowledge Engineering and Knowledge Management (EKAW'10)*. P. Cimiano and H.S. Pinto (Eds.). 11-15 October 2010, Lisbon, Portugal. Springer Lecture Notes in Artificial Intelligence LNAI 6317, 507-517.
7. Keet, C.M. On the feasibility of Description Logic knowledge bases with rough concepts and vague instances. *23rd International Workshop on Description Logics (DL'10)*, 4-7 May 2010, Waterloo, Canada. pp314-324.
8. Calvanese, D., Keet, C.M., Nutt, W., Rodríguez-Muro, M., Stefanoni, G. Web-based Graphical Querying of Databases through an Ontology: the WONDER System. *ACM Symposium on Applied Computing (ACM SAC 2010)*, March 22-26 2010, Sierre, Switzerland. pp 1389-1396.
9. Keet, C.M. Positionalism of relations and its consequences for fact-oriented modelling. *International Workshop on Fact-Oriented Modeling (ORM'09)*, Vilamoura, Portugal, November 4-6, 2009. Meersman, R., Herrero, P., and Dillon T. (Eds.), *OTM Workshops*, Springer, Lecture Notes in Computer Science LNCS 5872, 735-744.
10. Calbimonte, J.-P., Porto, F., and Keet, C.M. Functional dependencies in OWL ABoxes. *XXIV Brazilian Symposium on Databases (SBBD'09)*, Fortaleza, Brazil, 5-9 Oct, 2009. ACM SIGMOD's Digital Symposium Collection, 16-30.

11. Keet, C.M. Constraints for representing transforming entities in bio-ontologies. *11th Congress of the Italian Association for Artificial Intelligence (AI*IA 2009)*. R. Serra and R. Cucchiara (Eds.), Reggio Emilia, Italy, Dec. 9-12, 2009. Springer-Verlag Lecture Notes in Artificial Intelligence LNAI 5883, 11-20.
12. Keet, C.M. From granulation hierarchy to granular perspective. *IEEE International Conference on Granular Computing (GrC'09)*, Nanchang, China, August 17-19, 2009. IEEE Computer Society, pp306-311.
13. Keet, C.M. Ontology design parameters for aligning agri-informatics with the Semantic Web. *3rd International Conference on Metadata and Semantics (MTSR'09) – Special Track on Agriculture, Food & Environment*, Sept 3 - Oct 2 2009 Milan, Italy. F. Sartori, M.Á. Sicilia, and N. Manouselis (Eds.), Springer Communications in Computer and Information Science CCIS 46, 239-244.
14. Keet, C.M. Structuring GIS information with types of granularity: a case study. *VI International Conference on Geomatics*, 10-12 February 2009, Havana, Cuba.
15. Keet, C.M., Alberts, R., Gerber, A., Chimamiwa, G. Enhancing web portals with Ontology-Based Data Access: the case study of South Africa's Accessibility Portal for people with disabilities. *Fifth International Workshop OWL: Experiences and Directions (OWLED 2008)*, 26-27 Oct. 2008, Karlsruhe, Germany.
16. Artale, A., Guarino, N., and Keet, C.M. Formalising temporal constraints on part-whole relations. *11th International Conference on Principles of Knowledge Representation and Reasoning (KR'08)*. Gerhard Brewka, Jerome Lang (Eds.) AAAI Press, pp 673-683. Sydney, Australia, September 16-19, 2008.
17. Keet, C.M. Toward cross-granular querying over modularized ontologies. *International Workshop on Ontologies: Reasoning and Modularity (WORM'08)*. 2 June 2008, Tenerife, Spain. CEUR-WS Vol-348, 6-17.
18. Keet, C.M. Unifying industry-grade class-based conceptual data modeling languages with CM_{com} . *21st International Workshop on Description Logics (DL'08)*, 13-16 May 2008, Dresden, Germany. CEUR-WS, Vol-353. 11p.
19. Artale, A., Keet, C.M. Essential and mandatory part-whole relations in conceptual data models. *21st International Workshop on Description Logics (DL'08)*. 13-16 May 2008, Dresden, Germany. CEUR-WS, Vol-353. 11p.
20. Keet, C.M. A formal comparison of conceptual data modeling languages. *13th International Workshop on Exploring Modeling Methods in Systems Analysis and Design (EMMSAD'08)*. 16-17 June 2008, Montpellier, France. CEUR-WS, Vol-337, 25-39.
21. Keet, C.M. Granulation with indistinguishability, equivalence or similarity. *IEEE International Conference on Granular Computing (GrC'07)*, San Francisco, November 2-4, 2007. IEEE Computer Society, 11-16.
22. Tziviskou, C., Keet, C.M. A Meta-Model for Ontologies with ORM2. Third International Workshop on Object-Role Modelling (ORM'07), Algarve, Portugal, Nov 25-26, 2007. In: *OTM Workshops 2007*. Meersman, R., Tari, Z, Herrero, P. et al (Eds.), Lecture Notes in Computer Science LNCS 4805, 624-633.
23. Keet, C.M. Enhancing comprehension of ontologies and conceptual models through abstractions. *10th Congress of the Italian Association for Artificial Intelligence (AI*IA 2007)*, Rome, September 10-13, 2007. Basili, R., Pazienza, M.T. (Eds.), Springer-Verlag Lecture Notes in Artificial Intelligence LNAI 4733, 814-822.
24. Keet, C.M. Prospects for and issues with mapping the Object-Role Modeling language into $D\mathcal{L}\mathcal{R}_{ifd}$. *20th International Workshop on Description Logics (DL'07)*, 8-10 June 2007, Bressanone, Italy. CEUR-WS Vol 250, 331-338.
25. Keet, C.M., Rodríguez, M. Toward using biomedical ontologies: trade-offs between ontology languages. *AAAI 2007 Workshop Semantic eScience (SeS'07)*, 23 July 2007, Vancouver. AAAI Technical Report WS-07-11, 65-68.

26. Keet, C.M., Roos, M., Marshall, M.S. A survey of requirements for automated reasoning services for bio-ontologies in OWL. *Third international Workshop OWL: Experiences and Directions (OWLED 2007)*, 6-7 June 2007, Innsbruck, Austria. CEUR-WS Vol-258. 10p.
27. Keet, C.M. Part-whole relations in Object-Role Models. 2nd International Workshop on Object-Role Modelling (ORM'06), Montpellier, France, Nov 2-3, 2006. In: *OTM Workshops 2006*. Meersman, R., Tari, Z., Herrero., P. et al. (Eds.), Lecture Notes in Computer Science LNCS 4278. Berlin: Springer-Verlag, 2006, 1118-1127.
28. Keet, C.M. A taxonomy of types of granularity. *IEEE International Conference on Granular Computing (GrC'06)*, Atlanta, USA, May 10-12 2006. IEEE Computer Society, 106-111.
29. Keet, C.M. Representations of the ecological niche. *Third International Workshop on Philosophy and Informatics (WSPI2006)*, Saarbrücken, Germany. 3-4 May 2006. Johansson, I., Klein, B., Roth-Berghofer, T. (Eds.), IFOMIS Reports (ISSN 1611-4019), 2006, 14, 75-88.
30. Keet, C.M. Enhancing biological information systems with granularity. *KnowledgeWeb PhD Symposium (KWEPSY06)*, Budva, Montenegro, 17 June 2006. 6p.
31. Keet, C.M. Using abstractions to facilitate management of large ORM models and ontologies. International Workshop on Object-Role Modeling (ORM'05). Cyprus, 3-4 November 2005. In: *OTM Workshops 2005*. Halpin, T., Meersman, R. (eds.), Lecture Notes in Computer Science LNCS 3762. Berlin: Springer-Verlag, 2005, 603-612.
32. Keet, C.M. Factors affecting ontology development in ecology. *Data Integration in the Life Sciences 2005 (DILS'05)*, Ludäscher, B, Raschid, L. (eds.). San Diego, USA, 20-22 July 2005. Lecture Notes in Bioinformatics LNBI 3615, Springer Verlag, 2005, 46-62.
33. Keet, C.M., Kumar, A. Applying partitions to infectious diseases. XIX International Congress of the European Federation for Medical Informatics (MIE 2005). Geneva, Switzerland, 28-31 August, 2005. In: *Connecting Medical Informatics and bio-informatics*, Engelbrecht, R., Geissbuhler, A., Lovis, C. Mihalas, G. (eds.). Amsterdam: IOS Press, 2005, 1236-1241.
34. Keet, C.M. Conceptual Modelling and Ontologies for Biology: experiences with the bacteriocin database. *Agropecuaria Conference (Interjoven '04)*. 3-6 June 2004, San José de las Lajas, Cuba.

Encyclopedia entries

1. Keet, C.M. Granularity. *Encyclopedia of Systems Biology*, Springer, (accepted, to appear).
2. Keet, C.M. Reasoning, Automated. *Encyclopedia of Systems Biology*, Springer (accepted, to appear).

Selected Technical Reports

1. Keet, C.M. *Enhancing identification mechanisms in UML class diagrams with meaningful keys (extended version)*. Technical Report SoCS11-1, School of Computer Science, University of KwaZulu-Natal, South Africa. August 8, 2011. 11p.
2. R. Alberts, D. Calvanese, G. De Giacomo, A. Gerber, M. Horridge, A. Kaplunova, C. Maria Keet, D. Lembo, M. Lenzerini, M. Milicic, R. Moeller, M. Rodriguez-Muro, R. Rosati, U. Sattler, B. Suntisrivaraporn, G. Stefanoni, A.-Y. Turhan, S. Wandelt, M. Wessel. *Analysis of Test Results on Usage Scenarios*. Deliverable TONES-D27 v1.0, Oct. 10 2008.
3. Keet, C.M. *Mapping the Object-Role Modeling language ORM2 into Description Logic language \mathcal{DLR}_{ifd}* . KRDB Research Centre Technical Report KRDB07-2, Free University of Bozen-Bolzano, 15-2-2006. <http://arxiv.org/abs/cs.LO/0702089v2>. 21p.
4. Jarrar, M., Keet, C.M., Dongilli, P. *Multilingual verbalization of ORM conceptual models and axiomatized ontologies*. STARLab Technical Report, Vrije Universiteit Brussel. February 2006.
5. Keet, C.M. *Aspects of Ontology Integration*. Technical Report, Napier University, Edinburgh, Scotland. 2004.

Reviews

1. Keet, C.M. 2012. Book review of "Artificial Intelligence: The Basics" by Kevin Warwick. *International Studies in the Philosophy of Science* (forthcoming).
2. Keet, C.M. 2009. Dirty wars, databases, and indices. *Peace & Conflict Review*, 4(1):75-78.
3. Keet, C.M. 2008. Book review of "The changing dynamic of Cuban Civil Society" by Gray and Kapcia. *Latin American Politics and Society*, 50(4): 189-192.

Editing

1. Keet, C.M. (ed.). 2011. *The nonviolent personality*. Edited and translated from the Italian *la personalità nonviolenta* written by Giuliano Pontara.
2. Keet, C.M., Franconi, E. (eds.). *CSBio reader: extended abstracts of the 'CS&IT with/for biology' Seminar Series*. Free University of Bozen-Bolzano, 2005.

Symposia, seminar & working papers

1. Keet, C.M. Games tegen terrorisme en voor conflictoplossing. *Vredesterts*, April 2009, issue 49.
2. Keet, C.M. *Introduction to part-whole relations: mereology, conceptual modelling and mathematical aspects*. KRDB Research Centre Technical Report KRDB06-3, Faculty of Computer Science, Free University of Bozen-Bolzano, Italy. 2-10-2006. 32p.
3. Keet, C.M. *Granular information retrieval from the Gene Ontology and from the Foundational Model of Anatomy with OQAFMA*. KRDB Research Centre Technical Report KRDB06-1, Free University of Bozen-Bolzano, 6 April 2006. / SBIOLBD 2006 extended abstract. 7p.
4. Keet, C.M. Current characteristics and historical perspective of Computer Science and IT with/for biology. *CSBio Reader: extended abstracts of the 'CS&IT with/for biology' Seminar Series*, Free University of Bozen-Bolzano, 2005, 1-8.
5. Keet, C.M. *Towards a resolution of terrorism using game theory - coalitions, negotiations and audience costs*. Dept of Politics and Public Admin Working Papers, University of Limerick. Number 1, December 2003. 29p.

Theses

1. Keet, C.M. *A Formal Theory of Granularity*. PhD Thesis, KRDB Research Centre, Faculty of Computer Science, Free University of Bozen-Bolzano, Italy. 2008.
2. Keet, C.M. *Bacteria and bacteriocins in the food industry - modelled and documented in a relational database*. BSc (hons) thesis, Department of Computing, Faculty of Mathematics and Computing, Open University UK. 2004.
3. Keet, C.M. *Terrorism and Game Theory - coalitions, negotiations and audience costs*. MA Thesis, Department of Government and Society, University of Limerick, Ireland. 2003.
4. Keet, C.M. *Effect of maize rhizosphere on degradation of 3-chlorobenzoate by Pseudomonas B13 or Alcaligenes L6*. MSc Thesis, Department of Microbiology (Molecular Ecology Group), Wageningen University and Research Centre, the Netherlands. 1998.
5. Keet, C.M. *Acceptance of genetically modified microorganism on the basis of different points of view of life [Akseptatie van genetisch gemodificeerde mikro-organismen op basis van verschillende levensbeschouwingen]*. MSc Thesis, Department of Applied Philosophy, Wageningen University and Research Centre, the Netherlands. 1997.
6. Keet, C.M. *Microbial cyanide assimilation on behalf of detoxification of cyanogen glycosides [Mikrobiële cyanide-assimilatie t.b.v. ontgifting van cyanogene glykosiden]*. MSc Thesis, Department of Food Science (Section Food Microbiology), Wageningen University and Research Centre, the Netherlands. 1996.

Translation

1. *The nonviolent personality*. 2011. Translated from the Italian original *La personalità nonviolenta* written by Giuliano Pontara.

Teaching

Courses

- *Theory of Computation (COMP314)*, semester 2, 2011, 2012, 3rd year BSc core module, 16 credits, UKZN, Lecturer; includes course development, teaching, and labs.
- *Ontologies and Knowledge Bases (COMP718)*, semester 1, 2011, 2012, 4th year BSc honours course, 16 credits, UKZN, Lecturer; includes course development, teaching, and labs.
- *Databases (COMP306)*, semester 1, 2012, 3rd year BSc module, 16 credits, UKZN, Lecturer; includes teaching, and labs.
- *Introduction to ontology engineering, with emphasis on Semantic Web Technologies*; part of the Masters Ontology Winter School 2010, 16-30 July, Meraka Institute, South Africa; Lecturer; includes course development and teaching (15+7 hours lectures and labs).
- *Introduction to Ontology Engineering: Foundations and applications*, 5-15 July 2010, Universidad de las Ciencias Informáticas, Cuba; Lecturer; includes course development and teaching (20+10 hours lectures and labs).
- *Comprehensive introduction to ontology engineering*, 5-16 April 2010, MSc-level, Universidad de la Habana, Cuba; Lecturer; includes course development and teaching (20+10 hours lectures and labs).
- *Semantic Web Technologies*, part 2, 2009/2010, MSc-level (part of the European Masters in Computational Logic), 4 ECTS, FUB; Lecturer; includes course development and teaching.
- *Logic*, 2007/2008, BSc-level, 4 ECTS, FUB; Teaching Assistant.

Tutorials

- *Top-down Ontology Development*. Guest Lecture of the Ontology and Knowledge Based Systems fourth year (honours) course, University of KwaZulu-Natal, Durban, South Africa, d.d. 17-18 August 2010.
- *Representing and reasoning over a taxonomy of part-whole relations*. Mini Ontology Winter School (MOWS 2008), Knowledge System Group, Meraka Institute, 1-11 July 2008, Pretoria, South Africa.
- *Semantic Web for the Life Sciences*. Tutorial d.d. 23-5-2007 as part of the course 'Semantic Web Technologies' (course code: 70175, MSc-level), Free University of Bozen-Bolzano, Italy.
- *Introduction to part-whole relations: mereology, conceptual modelling and mathematical aspects*. Tutorial given on 23-10-2006 at the KRDB Research Centre, Free University of Bozen-Bolzano, Italy.

Student supervision

Several BSc projects & internships, with application-focussed topics in game theory and ontology engineering.

Co-authored publications resulting from BSc/BSc(Hons)/MSc student theses:

- BSc thesis: Web ontology mediated extraction of relational data.
Student: Giorgio Stefanoni.
Paper: conference paper no. 8 (ACM SAC'10).
- MSc thesis: Functional dependencies, keys and explicit functions in OWL ontologies.
Student: Jean-Paul Calbimonte.
Paper: conference paper no. 10 (SBBD'09).

Examinations

- Member FUB CS PhD Committee (Collegio di Docenti), 7-'08/12-'10.
- Member FUB Examination Commission of the BSc and MSc degrees in Computer Science, 2008/2009.

- External Examiner (MSc thesis), LBD EPFL, Switzerland. 2007.

Seminars and Presentations

Invited talks

- Semantic Computing with the WONDER System: Implementation, Challenges and Opportunities for Curriculum Development. University of South Africa, South Africa, 8 September 2010.
- Engineering rough ontologies. University of the Witwatersrand, Johannesburg, South Africa, 26 August 2010.
- Temporal Constraints on Part-Whole Relations. Universidad de las Ciencias Informáticas, La Habana, Cuba, 20 April 2010.
- Desarrollo de ontologías como un nivel de abstracción de las bases de datos relacionales. Department of Informatics, Universidad de la Habana, Cuba, 19 April 2010.
- Logic-based ontologies of environments. Locating Biology, Dagstuhl Workshop, February 2010.
- Representing and Reasoning over a Taxonomy of Part-Whole Relations. 10 September 2009, DERI Galway, Ireland.
- Specifying and coordinating abstractions by taking advantage of granularity. Complex Systems & Artificial Intelligence Research Centre, DISCo, University of Milano-Bicocca, 28 April 2009, Milan, Italy.
- Games tegen terrorisme en voor conflict-oplossing—Speltheoretische onderhandelingen met coalities van gekwetste groepen en de regering. Gaming for War or Peace: ICT voor Wereldvrede Symposium, Stichting Vredescentrum Eindhoven (Peace Center Eindhoven), 4 November 2008, Eindhoven, the Netherlands.
- A formal comparison of conceptual data modeling languages—A prelude to intelligent CASE tools. Seminar given on July 17, 2008, at the KSG group, Meraka Institute, Pretoria, South Africa.
- A theory of granularity. Agromatica, Instituto de Ciencia Animal, 21 May 2008, San José de las Lajas, Habana, Cuba.
- On modelling and formally representing granularity. Fondazione Bruno Kessler (ITC-IRST), 3 December 2007, Trento, Italy.
- Europeanization of education. International Workshop on the Impact of EU Education Policy and Educational System Reforms on Youth and Society, 29/30 March 2006, Brussels, Belgium. *keynote speech*
- Using bio-ontologies in RDBMSs for querying granular information. Bioinformatics, Ontologies and databases Seminar day 13-2-2006 (SBIOLBD'06), LBD, EPFL, Lausanne, Switzerland.
- Data and ontology integration issues in the biosciences. Seminar given on 23-8-2004 at the Micro-Array Department, Integrative Bioinformatics Unit, University of Amsterdam, The Netherlands.

Other talks (selection)

- Ontology-driven formal conceptual data modelling for biological data analysis. Presentation given at the Research Session of the Masters Artificial Intelligence spring School 2011 (MAIS'11), Durban, South Africa, d.d. 27 Sept., 2011.
- Ontology engineering with rough concepts and vague instances. KRDB Lunch Seminar, d.d. 15 June 2010.
- Comparing and unifying industry-grade conceptual data modelling languages. KRDB Lunch Seminar, d.d. 2 December 2008.

- Ontological and logical aspects of part-whole relations. KRDB Lunch Seminar series, 19 February 2008.
- Current characteristics and historical perspective on 'CS and IT with/for Biology'. Presentation given on 20-10-2005 at the KRDB Research Centre, Free University of Bozen-Bolzano, Italy.
- ORM introduction. Seminar given on 27-4-2004 at the Laboratory of Applied Ontology, Trento, and Free University Bolzano/Bozen, Italy.
- Presentation of accepted papers at conferences and workshops: Interjoven04, MIE05, DILS05, ORM05, KWEPSY06, WSPI06, GrC06, ORM06, OWLED07, SeS07, AI*IA07, DL07, GrC07, DL08, WORM08, EMMSAD08, KR08, OWLED08, Geomatics09, RST09, GrC09, MTSR09, ORM09, AI*IA09, DL10, EKAW10, ORM10, ESWC'11, AFRICON'11, SAICSIT'11.

Organisational activities and reviewing

Organisational activities

- Organiser of the Masters Artificial Intelligence spring School 2011 (MAIS'11), Durban, South Africa (26-30 Sept. 2011).
- Library Liaison, UKZN (June 2011-present).
- Responsible person for the KRDB seminars (10-'07/3-'10).
- PC co-Chair of the KRDB PhD Workshop, 11 May 2007, KRDB Research Centre, Free University of Bozen-Bolzano. (with Mariano Rodríguez).
- Co-organiser KRDB Seminar Series 2006, KRDB Research Centre, Free University of Bozen-Bolzano. (with Rosella Gennari).
- Organiser CS and IT with/for Biology, Seminar Series at the KRDB Research Centre, Free University of Bozen-Bolzano. Oct-Dec 2005 (with Enrico Franconi).
- Academic organisational and managerial activities in the capacity of student representation:
 - PhD Students' representative at the Faculty of Computer Science, Free University of Bozen-Bolzano, 11-'06/1-'08.
 - Student member of the Executive Committees of the Education Institute Food Technology and Nutrition at the Wageningen Agricultural University, the Netherlands, 6-'97/1-'98.
 - Student member of the Cluster of the Departments Food Technology and Human Nutrition, at the Wageningen Agricultural University, the Netherlands, 10-'95/7-'96.
 - Elected Member of the Faculty/University Council of the Wageningen Agricultural University on behalf of the Progressive Student Fraction (fulltime). Committee member of Research & Education and the Commission Student Affairs (of which the latter as vice-chairperson). 9-'94/9-'95.
- Other activities (selection):
 - Project proposal writing experience as initiator, PI, WP leader, and contributor (12).
 - Webmaster: MAIS'11, CS PhD students website (with Mariano Rodríguez), Professors without Borders (4-'06/12-'10), Irish Peace Society (10-'02/10-'04).
 - Member of the World Wide Web Consortium's Health Care & Life Sciences Special Interest Group (W3C HCLS IG) <http://www.w3.org/2001/sw/hcls/> (active participant from 2005 to 2007)

Program Committee member and reviewing for journals

- PC member of the Extended Semantic Web Conference (ESWC'12)
- PC member 6th International Conference on Rough Sets and Knowledge Technology (RSKT'11)
- PC member 6th IEEE International Conference on Granular Computing (GrC'11)

- PC member 5th International Workshop on Modular Ontologies (WoMO'11)
- PC member International Conference on Biomedical Ontology 2011 (ICBO'11, ICBO'12)
- PC member Metadata & Semantics Research Conference, Special Track on Agriculture, Food & the Environment (MTSR'10, MTSR'11)
- PC member 6th International Workshop on Fact-Oriented Modeling (ORM'10)
- PC member Australasian Ontology Workshop (AOW'09, AOW'10, AOW'11)
- PC member International Conference on Knowledge Engineering and Ontology Development (KEOD'09, KEOD'10)
- PC member Semantic Web Applications and Tools for the Life Sciences (SWAT4LS'08, SWAT4LS'09, SWAT4LS'10, SWAT4LS'11)
- PC member Knowledge Representation Ontology Workshop 2008 (KROW'08)
- PC member Int. Workshop Semantic Web and Health Care and Life Sciences 2008
- PC member Int. Workshop Network Tools and Applications in Biology 2007 (NETTAB'07)
- PC member Int. Workshop on Engineering Semantic Agent Systems (ESAS'06, ESAS'07, ESAS'08, ESAS'09)
- Reviewer (invited or delegated) also for:
 - Applied Ontology
 - Artificial Intelligence in Medicine
 - BMC Bioinformatics
 - Data & Knowledge Engineering
 - Environmental Modelling & Software
 - Fundamenta Informaticae
 - IEEE Transactions on Fuzzy Systems
 - IEEE Transactions on Knowledge and Data Engineering
 - Information Sciences
 - International Journal of Approximate Reasoning
 - International Studies in the Philosophy of Science
 - Journal Of Biomedical Semantics
 - Knowledge Management Research & Practice
 - South African Computer Journal
 - International Conference on the Principles of Knowledge Representation and Reasoning (KR'10)
 - International Joint Conference on Artificial Intelligence 2009 (IJCAI'09)
 - European Semantic Web Conference (ESWC'07, ESWC'08, ESWC'09)
 - European Summer School in Logic, Language and Information (ESLLI'09 student session)
 - European Conference on Logics in Artificial Intelligence (JELIA'08)
 - Int. Workshop on Evolution and Change in Data Management (ECDM'08)
 - Int. Workshop on Description Logics 2008 (DL'08)
 - Reverse Network of Excellence (FP6) Deliverable I6
 - International Conference on Computer-based Medical Systems 2006 (CBMS'06), Special track on Ontologies for Biomedical Systems
 - International Conference on Ontologies and Databases (ODBASE'05, ODBASE'06)

Membership of Professional Organisations

- International Association for Ontology and its Applications (IAOA)
- South African Institute for Computer Scientists and Information Technologists (SAICSIT)
- Associazione Italiana per la Intelligenza Artificiale (AI*IA)
- Informatici Senza Frontiere (ISF)

Awards and grants

- Y1 rated researcher in South Africa, obtained in Nov. 2011.
- Full grant to attend the EDBT Summer School, Bolzano, Italy, September 2007.
- KnowledgeWeb Network of Excellence grant to attend the KWEPSY PhD symposium in Budva, Montenegro, June 2006.
- PhD Scholarship Free University Bozen-Bolzano, Italy, 2005-2007.
- Research student scholarship, Napier University Edinburgh, UK, in 2003-'04.
- Semantic Mining in Biomedicine Network of Excellence grant to attend the Semantic Mining summer school in Balatonfüred, Hungary, July 2004.
- First paper award, Agropecuaria Conference (Interjoven 2004), San Jose de las Lajas, Cuba, June 2004.
- Internship grant from the Laboratory of Applied ontology (LOA-CNR), Trento, Italy, in 2004.
- Best Society Award from the University of Limerick for the Irish Peace Society (when I held the position of chairperson), 2003.
- National Merit Award from School and University Internet Awards (SUIA) for the Irish Peace Society's website www.peace.ie (when I held the position of Webmaster), 2003.

Projects

- Participation (researcher) in the Marie Curie action funded by the EC under ICT Call 3 FP7-PEOPLE-2009-IRSES on a *Network for Enabling Networked Knowledge (NET2)*. Project duration: 2010-2012.
- Participation (researcher) in the Italy - South Africa collaboration project *Technologies for Conceptual Modelling and Intelligent Query Formulation*, within the Executive Programme of Scientific and Technological Co-Operation between the Italian Republic and Republic of South Africa 2008-2010; Coordinators Prof. Enrico Franconi (Italy) and Dr. Thomas Meyer (South Africa). Project duration: 2008-2010.
- Participation (tester and report writing) in the *EU FP6 FET TONES Project* on Ontology-Based Data Access for databases in the subject domain of people with disabilities and of horizontal gene transfer. Project duration: 2006-2008.
- Initiator and participation (coordination and research) in the project for *in silico* hypothesis testing with the database about horizontal gene transfer (HGT-DB). Main KRDB people involved are Prof. Werner Nutt, Mariano Rodríguez-Muro, and Giorgio Stefanoni and domain experts Prof. Santiago Garcia-Vallvé ("Rovira i Virgili" University, Tarragona, Spain) and Dr. Mark van Passel (Wageningen University and Research, the Netherlands). Project duration: 2006-2011.

Languages

- Dutch: mother tongue
- English: fluent
- German: medium/good
- Italian: medium/good
- Spanish: medium/good
- French: very basic

- Afrikaans: ± understand
- isiZulu: extremely basic

Extra-curricular activities

- Member of *Informatici senza Frontiere* [Informaticians without borders]; 3-'10/present.
- Co-founder of *Professors without Borders* (www.professorswithoutborders.net), an academic organisation that conducts, facilitates, and stimulates inter-regional peace research. I held the positions of Chairperson and Chief Publications Officer; 4-'05/present (dormant).
- Member of the delegation of the Free University of Bozen-Bolzano to the *Harvard World Model United Nations (WorldMUN) 2007* in Geneva; 11-'06/4-'07.
- Active member *Irish Peace Society*, University of Limerick, Ireland. Held the positions of Chairperson ('02/'03) and Webmaster ('02/'04) of www.peace.ie; 10-'02/11-'04.
- Member of the *Rugby Club Wageningen*, the Netherlands. Held the position of internal & external communications in the RCW steering group and co-organised the annual tour abroad (9-'97/8-'98); 9-'95/8-'99.
- *Intermediair Competition in Excellence*, a game simulation of businesses among the top 250 students from Dutch Universities; 2-'98.
- Active member of the *Wageningen Student Organization (WSO)*. Activities, a.o.: volunteer WSO-shop (9-'93/1-'98), chairperson three-weekly general meetings (2-'97/1-'98); 9-'92/1-'98.
- Active member of *Dwars*, a political youth organization. Activities: a.o. co-founder of the division Dwars Ede-Wageningen, organizing workshops. From 5-'94 to 7-'97 delegate in the Federation of Young European Greens (FYEG). Two projects were co-organizing the Cultural Seminar in Koprivstitsa, Bulgaria (9-'95) and the bi-annual Federative Council of the FYEG in Wageningen (6-'96), of which I was the final responsible person; '93/7-'96.