

Siegfried ROUVRAIS

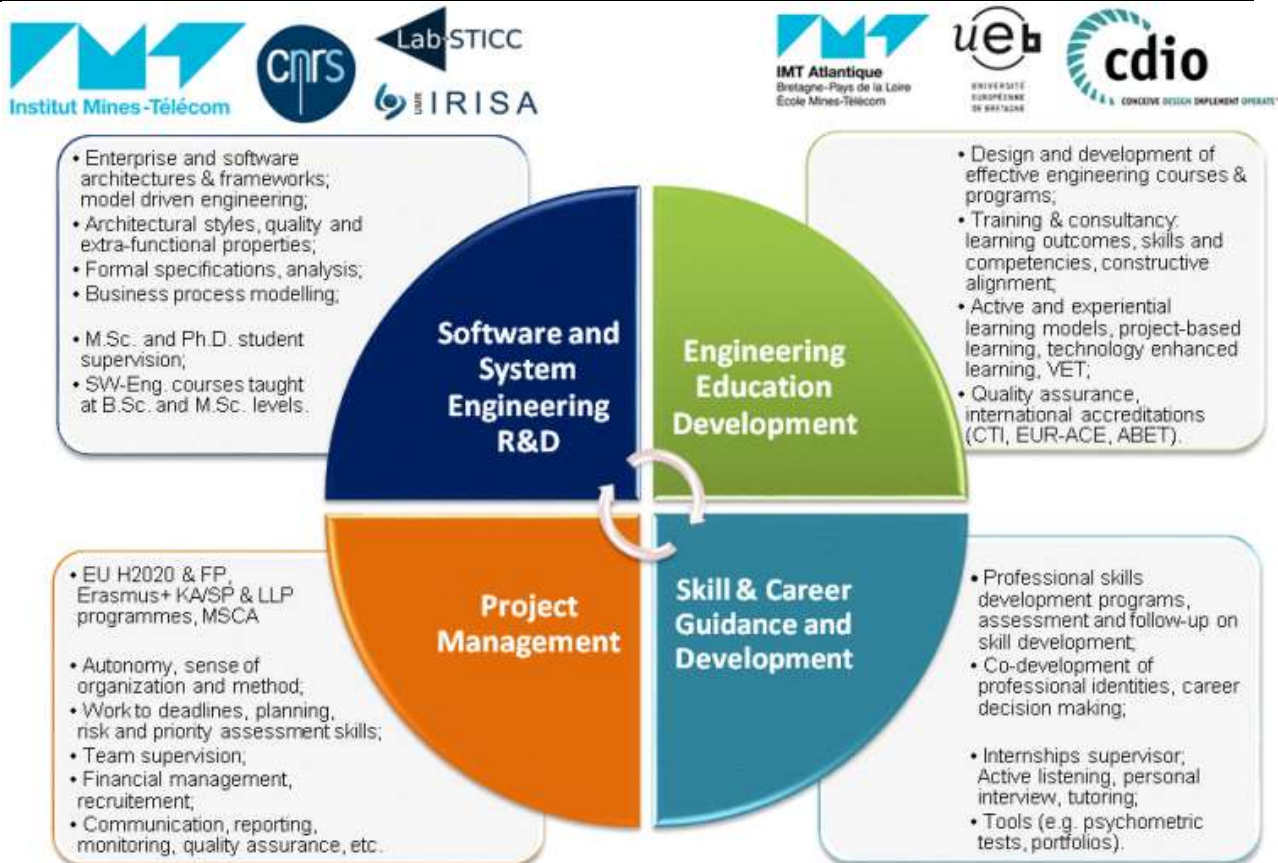
IMT Atlantique, Grad. School of Engineering
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52 years old (1970)
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A/Professor at Institut Mines-Télécom, CNRS
Ph.D. 2002, University of Rennes, France

IEEE Senior Member
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more than 20 years of experience in System Engineering R&D and Engineering Education Design & Development

Main Skills



Academic Positions & Experience

Since 2019: A/Prof & Senior Researcher in [Lab-STICC](#), UMR 6285 ([CNRS](#) French multidisciplinary research laboratory, created in 2008)

- Dpt MOCS: methods for modeling, transformations and decision-making, SHARP team

2021: Visiting A/Professor at Reykjavik University, Iceland

2016: Visiting Academic at University of Cape Town, South Africa

2012-2018: Senior Researcher in Computer Science

- [IRISA](#), UMR 6074 (i.e. French joint research CNRS unit, created in 1975)
 - Dpt. Language & Software Engineering, member of the *Adaptive Software Systems* team

Since 2002: Researcher and Associate Professor in Software & System Engineering

- [Institut Mines-Télécom](#): French scientific public institution and research centre, under the authority of the French Ministers for Industry and Communications
- [IMT Atlantique](#) (formerly *Ecole Nationale Supérieure des Télécommunications*, 1977): French selective Engineering *Grande Ecole* in ICT (Master level, 1,000 students each year), THE/QS ranked
 - member of the *Software Engineering* Group, Dept. of Computer Science;
 - co-manager of the [Transdisciplinary Research in Engineering Education](#) Group (TREE)

2000-2001: Assistant Professor: [ENSSAT](#), French graduate engineering School in Applied Science

1998-2000: Assistant Lecturer: [ISTIC](#), University of Rennes, France

Titles and Diplomas

2008: *Maître de Conférences* qualification (tenure A/Prof) by the [French National University](#) (Computer Science, CNU section 27)

2002: Ph. D. in Computer Science, [University of Rennes](#), France & [INRIA research Lab](#).

- areas of examination: software architectures and distributed systems; dissertation: *Mobile agents for distributed service compositions*, with honours; full grant from the French Ministry of Education

1997: Research M.Sc. in Computer Science, [University of Rennes](#), France

- thesis: *Software architectures and security properties*; major: Software Engineering

Responsibilities & some Leadership Experience

2022: EU Erasmus+ KA2 cooperation partnership (DECART: Design of higher Education Curricula for Agility, Resilience and Transformations. Project leader, 400 000 Euros; www.decartproject.eu

2019-2021: EU Erasmus+ KA2 capacity building (EASTEM: Euro-Asia collaboration for enhancing STEM education), Work package leader on STEM enhancement models and processes, 999 000 Euros; www.eastemproject.eu

Since 2018: expert program evaluator for the French engineering accreditation body ([CTI](#)), >16 programs reviewed in France and Belgium

2017-2020: EU Erasmus+ KA2 innovation project (DAhoy: Decisionship Ahoy!): project coordinator and leader, n° 2017-1-FR01-KA203-037301, 395 075 Euros; www.dahoyproject.eu; awarded in 2021 the title of best Emerging Innovative Course [prize](#) from IMT (13 Schools).

Since 2007: AFNOR (French ISO) evaluator member on [IQLS](#) (*Ingénierie et qualité du logiciel et des systèmes*), mirror of ISO/IEC JTC1/SC7 "Software and systems engineering"

2016-2018: TREE research group coordinator (Transdisciplinary Research in Engineering Education) <http://recherche.imt-atlantique.fr/tree/>

2014-16: EU Erasmus+ KA2 innovation project (Quality Assurance and Enhancement Marketplace for Higher Education): Work Package leader on Process Assessment Models, n° 2014-1-IS01-KA203-000177, 207 000 Euros;

2014-17: EU Erasmus Mundus A2 project (INternational Science Promoting Innovation and entREpreneurship, with South Africa): institutional manager, n° 2014-0879/001-001-EM, 2.2 Million Euros; <http://inspiresouthafrica.eu/>

2015: grantee "*Soutien à la Préparation de Projets Européens*", Brittany regional action for internationalization and European agenda, n° 9017-LEEF: Life Long Engineering Education for the Future;

2013: EU-CEDEFOP study visit "Scottish Credit and Qualifications Framework:", n°106; <http://scqf.org.uk/>

2013: International CDIO council member: elected during the 9th MIT/Harvard conference, 6 members at large, secret ballot; French CDIO correspondent since 2010; <http://www.cdio.org>

2013: Marie Curie International Outgoing Fellowship for Career Development (applicant): EU 7th Framework Programme for Research; application scored over the thresholds on each criteria, ranked B;

2012-13: EU QUESTE-SI project (Quality System of European Scientific and Technical Education, Lifelong Learning Programme): self-assessment report manager for sustainable education; <http://plone.queste.eu/>

2012: International CDIO meeting at Telecom Bretagne: organizer (100 participants over 3 days); <http://conferences.telecom-bretagne.eu/cdiofallmeeting2012/>

2010: Vocational program for adults in Information System technical architectures: full program manager (600-hour, M.Sc. level, more than 20 teachers managed, liaison with professional branches);

2009: Non formal learning recognition and qualification: mentor for adult candidates to master of engineering diplomas based on their years of professional experiences, RPL processes;

Since 2008: Educational program alignment and evaluation: EU ENAEE, CTI French accreditation body, and CDIO standards requirements;

2008: [5th International French-speaking colloquium](#) “Questions of Pedagogy in Higher Education”: co-organiser (more than 200 participants, 140 paper submissions, 1100-page proceedings managed); <http://www.colloque-pedagogie.org/?q=node/550>

Since 2007: [Professional and personal pathways](#): designer and co-pilot of a 63-hour course (definition of workshops, monitoring of student individual learning, portfolio, career counselling, MBTI psychometric test debriefings, preparation to recruitment procedures, assessment centres, etc.);

2003-2007: [Educational program reform](#) (transversal and professional skills): co-design and implementation of an integrated project-based curriculum at TELECOM Bretagne (one 120h-project per semester);

2002-2005: [EU LLP Leonardo project](#) (Internet-based vocational training of communication students, engineers, and technicians): Work Package leader, 204 000 Euros; <http://www.invocom.et.put.poznan.pl/>

1998-2001: [EU ESPRIT C3DS project](#) (Control and Coordination of Complex Distributed Services): 4th EU Framework Programme, European Commission's Information Technology Research Programme, NoE: INRIA Rennes WP member, n° 24962;

Publications

	Book Chapters	Intl. Journals	French Journals	Intl. Confs.	French Confs.	Intl. WS	French WS
Engineering Education	5	5		40	11	2	2
Software Engineering	1	1	1	15	2	2	
Total (76)	6	6	1	55	13	4	2

Program Committee memberships: [IEEE Frontiers In Education](#), [CDIO](#), [IEEE LaTiCE](#) (Learning & Teaching in Computing and Engineering), [QPES](#) (*Questions de pédagogie dans l'enseignement supérieur*), Intl. Conf. on Software Engineering Advances, Advanced Intl. Conf. on Telecommunications, *Conférence francophone sur les Architectures Logicielles*, etc.

Miscellaneous

- **Qualities:** system thinking, strong analytical skills, conceptualization, inter & trans-disciplinarity, thinking beyond the frame, intercultural;
- **Main personality traits:** curious and open-minded, observant and analytical, strongly organized with a long-term vision, adaptable, cooperative and consensual, initiative with team spirit, conscientious and reflective, without borders, incl. cultural and social consciousness;
- **Communication skills:** written and verbal (conferences, publications, project application & reporting, etc.);
- **Various:** first aid certified, fire prevention and rescue services;
- **Hobbies:** sailing, racing and coordinating teams (e.g. inshore Intl. [Formula 18](#) catamaran 1993-98, offshore IRC3-4 races 1994-2011, Diam24OD [Tour de France à la Voile](#) 2015).

Main Publications in Engineering Education (in English)

- S. Rouvrais, I. Liem, H. Audunsson, and C. Gerwel Proches. ***If you please, draw me a resilient curriculum!*** in Proceedings of the 18th International [CDIO](#) Conference, Reykjavik Iceland, June 13-15, 2022
- Audunsson, S. Rouvrais, R. Rudd, R. Kristjansson, and O. M. S. Moschetta. ***Final Project Course Required for Master Level Programs in Engineering?*** In Proceedings of the 18th International [CDIO](#) Conference, Reykjavik Iceland, June 13-15, 2022.
- S. Rouvrais, C. Gerwel Proches, H. Audunsson, N. Chelin, I. Liem, and L. Tudela Villalonga. ***Preparing 5.0 engineering students for an unpredictable post-COVID world.*** In Proceedings of the [2020 World Engineering Education Forum](#) and the Global Engineering Deans Council (WEEF/GEDC) Virtual Conference, "Disruptive engineering education amidst global challenges", 16-19 November 2020.
- Waldeck R., Gaultier Le Bris S. and Rouvrais S. ***Interdisciplinarity and VUCA. Chapter 5, "Methods and Interdisciplinarity"*** series, Volume 1, Modeling Methodologies in Social Sciences Set. Ed. R. Waldeck. pages 99-116, Published by ISTE Ltd and John Wiley & Sons, Inc., December 2019.
- Gaultier Le Bris S., Rouvrais, S., and Waldeck R. ***Learning Methodologies for VUCA Situations.*** Chapter 6 in ISTE book, "[Methods and Interdisciplinarity](#)" series, Volume 1, Modeling Methodologies in Social Sciences Set. Ed. R. Waldeck. pages 117-148, Published by ISTE Ltd and John Wiley & Sons, Inc., December 2019
- Rouvrais, S., Gaultier Le Bris, S., and Stewart M. ***Engineering Students Ready for a VUCA World? A Design based Research on Decisionship.*** In Proceedings of the [14th International CDIO Conference](#), KIT, Kanazawa, Japan, June-July, 2018.
- Rouvrais, S., B. Remaud, and M. Saveuse. ***Work-based Learning Models in French Engineering Curricula.*** [EJEE](#) European Journal of Engineering Education 2018, also in Proceedings of the [13th CDIO](#) Intl. Conference, University of Calgary, pp. 766- 781. Brennan, Edström, Hugo, Roslöf, Songer & Spooner (Eds). Canada, June 18-22, 2017.
- Bennedsen, J., Rouvrais, S., Roslof, J., Kontio, J., and McCartan C.D. ***Collaborative Quality Enhancement in Engineering Education: an Overview of Operational Models at a Programme Level.*** [EJEE](#) European Journal of Engineering Education, 2018.
- Gerwel Proches C., Chelin N., and Rouvrais S. ***Think first job! Preferences and expectations of engineering students in a French 'Grande Ecole'.*** [EJEE](#) European Journal of Engineering Education, Pages 309-325, volume 43, Issue 2, 2018.
- Rouvrais, S., and Gaultier Le Bris, S. ***Breadth Experiential Courses to Flexibly Meet New Programme Outcomes for Engineers.*** In Book: "Engineering Education for a Smart Society", Springer, International Association of Online Engineering, M.E.Auer & Kwang-Sun Sim (Eds), Advances in Intelligent Systems and Computing Series, 627(1), January 2018, pp 326-342.
- Kloot, B., and Rouvrais, S. ***The South African Engineering Education Model with a European Perspective: History, Analogies, Transformations, and Challenges.*** European Journal of Engineering Education (EJEE), "European Models of Engineering Education: Evolution and Challenges", 2017.
- Rouvrais, S., and Gaultier Le Bris, S. ***Breadth Experiential Courses to Meet Programme Outcomes for Engineers.*** Proceedings of the 6th World Engineering Education Forum & The Global Engineering Deans Council. Springer. 6-10 November 2016, Seoul, Korea.
- Bennedsen, J., and Rouvrais, S. ***Finding Good Friends to Learn from and to Inspire.*** Proceedings of the 46th Annual Frontiers in Education (FIE) IEEE Conference. "The Crossroads of Engineering and Business", October 12-15, Erie, PA, USA, 2016.
- Bennedsen, J., Clark, R., Rouvrais, S., and Shrey-Niemenmaa, K. ***Using Accreditation Criteria for Collaborative Quality Enhancement.*** In Proceedings of the [5th World Engineering Education Forum](#), 20-24 September 2015, Florence, Italy.
- Clark, R., Bennedsen, J., Rouvrais, S., Kontio, J., Heikkinen, K., Georgsson, F., Matthiasdottir, A., Soemundsdottir, I., Karhu, M., Shrey-Niemenmaa, K., and Hermon, P. ***Developing a Robust Self Evaluation Framework for Active Learning: The First Stage of an Erasmus+ Project.*** In Proceedings of the [43rd Annual SEFI Conference](#), June 29-July 2, 2015, Orléans, France. ***ERA ranked B***
- Kontio, J., Heikkinen, K., Georgsson, F., Bennedsen, J., Clark, R., Matthiasdottir, A., Hermon, P., Rouvrais, S., and Karhu, M. ***QA and Enhancement Marketplace for HEIs: An Erasmus+ project.***

- In Proceedings of the 11th intl. CDIO Conference*: 8-11 June 2015, Chengdu University of Information Technology, Sichuan, P.R. China.
- Rouvrais, S. and Lassudrie, C. **An Assessment Framework for Engineering Education Systems.** *In Proceedings of the 14th intl. SPICE Conference*. Springer CCIS series, no 447. A. Mitasiunas et al. (Eds.), pp. 250–255. 4-6 November 2014, Vilnius University, With talk. **ERA ranked B**
 - Rouvrais, S., Le Locat, C., and Flament, S. **Return on Experience from Sustainability Audits in European Engineering Educational Institutions.** *In Proceedings of the 41th intl. SEFI Conference: "Engineering Education Fast Forward"*. 16-20 September 2013, KU Leuven, Belgium. With talk. **ERA ranked B**
 - *In Proceedings of the 9th intl. CDIO Conference: "Engineering Leadership in Innovation and Design"*. 9-13 June, 2013, MIT & Harvard School of Engineering and Applied Sciences, Cambridge, MA, USA:
 - Lassudrie, C., Kontio, J., and Rouvrais, S. **Managing the Continuous Improvement Loop of Educational Systems: Students as key actors in program evaluation.** With talk.
 - Gourvès-Hayward, A., Morace, C., and Rouvrais, S. **The Global Village: A Student-led Initiative for Intercultural Skills**
 - Theodorsdottir, A. H., Saemundsdottir, I., Malmqvist, J., Turenne, S., and Rouvrais, S. **Comparison of Hiring and Promotion Criteria Linked to Teaching, Educational Development and Professional Engineering Skills.**
 - *In Proceedings of the 8th International CDIO Conference*, Queensland University of Technology, Brisbane, July 1-4, 2012:
 - Rouvrais, S. and Landrac G. **Resistance to Change in Institutionalizing the CDIO Standards: From a Waterfall to and Agile Improvement Model.** With talk.
 - Rouvrais, S. and Chelin, N. **Introducing Personality Tests to Clarify Engineering Student Self-perception and Demystify Recruitment Procedures.** With talk.
 - Rouvrais, S. and Chiprianov, V. **Architecting the CDIO Educational Framework Pursuant to Constructive Alignment Principles.** *International Journal of Quality Assurance in Engineering and Technology Education (IJQAETE). Developments in Engineering Education Standards: Advanced Curriculum Innovations*. Vol. 2(2), April 2012. Editors: A. Patil and P. Gray. IGI Global (USA).
 - Rouvrais, S. **Recognizing non Formal Learning Experiences: Top-down or Bottom-up Approaches for Skills Alignment.** *In proceedings of the 3rd IEEE Global Engineering Education Conference (IEEE EDUCON 2012), Collaborative Learning & New Pedagogic Approaches in Engineering Education*. Marrakech, Morocco, April 17-20, 2012. With talk.
 - Rouvrais, S. and Kanellos, I. **Facing Computer Science Misconceptions: An Introductory Course Based on Historical Strands and Career Paths at a Glance.** *In Electronic Proceedings of the 41th ASEE/IEEE Frontiers in Education Conference (IEEE FIE 2011)*, Rapid City, South Dakota, October 12-15, 2011. With talk. **ERA ranked A**
 - Rouvrais, S., Mallet, J., and Vinouze, B. **A Starter Activity Design Process to Deepen Students Understanding of Outcome-related Project Learning Objectives.** *In Electronic Proceedings of the 40th ASEE/IEEE Frontiers in Education Conference (IEEE FIE 2010)*, Arlington, Washington D.C., October 27-30, 2010. With talk. **ERA ranked A**
 - Rouvrais S. and Chelin N. **Engineer Professional Identity: For an Early Clarification of Student's Perceptions.** *In Electronic Proceedings of the 6th International CDIO Conference*, École Polytechnique, Montréal, June 15-18, 2010. With talk.
 - Rouvrais S., Ormrod J., Landrac G., Mallet J., Gilliot J-M., Thepaut A., and Tremembert P. **A Mixed Project-based Learning Framework: Preparing and Developing Student Competencies in a French Grande Ecole.** *SEFI-European Journal of Engineering Education, "Engineering Competencies"*. Volume 31, Number/Issue 1. Pages 83–93. March 2006. **Journal ERA ranked**
 - Rouvrais S., Gilliot J-M., Graton G., and Degrugillier D. **Electronic Simulations within a Polymorph Pedagogical Canvas for Online Education.** *In Proceedings of IEEE ICSES'04: IEEE International Conference on Signals and Electronic Systems*. September 13-15 2004, Poznan, Poland, 2004. With talk.
 - Gilliot J-M. and Rouvrais S. **A Pedagogical Canvas for On-line Simulation-based Lessons.** In Cantoni, L. and McLoughlin C. (Eds). *Proceedings of ED-MEDIA'04, World AACE Conference on Educational Multimedia, Hypermedia and Telecommunications (Association for the Advancement of Computing in Education)*, pages 3727-3732. Switzerland, Lugano, June 2004. With talk.

Main Publications in Software and System Engineering (non French)

- Alloush, I., Charbel, A., Kermarrec, Y., and Rouvrais, S. **A Domain-Specific Framework for Creating Early Trusted Underwater Systems Relying on Enterprise Architecture.** [IEEE MASCOTS 2014](#), 22nd International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems, Paris, France, September 9-11th, 2014.
- Chiprianov, V., Kermarrec, Y., Rouvrais, S., and Simonin, J. **Extending Enterprise Architecture Modeling Languages for Collaboration.** *Software and Systems Modeling journal (SoSyM)*, Enterprise Modelling. Editors: B. Barn and T. Clark. November 2012. *ERA ranked*
- Chiprianov, V., Kermarrec, Y., Rouvrais, S. **Integrating DSLs into a Software Engineering Process: Application to Collaborative Construction of Telecom Services.** Chapter 15 in book: [Formal and Practical Aspects of Domain-Specific Languages: Recent developments](#). M. Mernik editor. IGI Global Publishing (USA), pp. 415-442, September 2012.
- Chiprianov, V., Kermarrec, Y., and Rouvrais, S. **Extending Enterprise Architecture Modeling Languages: Application to Telecommunications Service Creation.** [ACM SAC 2012](#), 27th Symposium on Applied Computing, Trento, Italy, March 26-30, 2012. *ERA ranked*
- Chiprianov, V., Kermarrec, Y., and Rouvrais, S. **On the Extensibility of Plug-ins.** [ICSEA 2011](#), 6th Intl. Conf. on Software Engineering Advances, Barcelona, Spain, October 23-28, 2011.
- Chiprianov, V., Alloush, I., Kermarrec, Y., and Rouvrais, S. **Telecommunications Service Creation: Towards Extensions for Enterprise Architecture Modeling Languages.** [ICSOFT 2011](#), Intl. Conf. on Software and Data Technologies, Seville, Spain, July 2011. *ERA ranked*
- Chiprianov, V., Kermarrec, Y., and Rouvrais, S. **Practical (meta-)Model Extension for Modeling Language Profiles. An Enterprise Architecture Modeling Language Extension for Telecommunications Service Creation.** [IDM2011](#), French Colloquium on Ingénierie Dirigée par les Modèles, Polytech Lille, June 2011.
- Chiprianov, V., Kermarrec, Y., and Rouvrais, S. **Towards Semantic Interoperability of Graphical Domain Specific Modeling Languages for Telecommunications Service Design.** [MOPAS 2011](#), 2nd International Conference on Models and Ontology-based Design of Protocols, Architectures and Services. pp. 21-24. Budapest, Hungary. April 2011. (*Best paper award*).
- Chiprianov V., Kermarrec Y., and Rouvrais S. **Meta-tools for Software Language Engineering: A Flexible Collaborative Modeling Language for Efficient Telecommunications Service Design.** [FlexiTools'2010: Workshop on Flexible Modeling Tools \(in conjunction with 32nd ACM/IEEE ICSE Intl. Conf. on Software Engineering\)](#). Cape Town, South Africa. May 2010.
- Mallet J. and Rouvrais S. **Style-Based Model Transformation for Early Extrafunctional Analysis of Distributed Systems.** In *Proceedings of the 4th International Conference on the Quality of Software Architectures (QoSA 2008): "Models and Architectures"*. LNCS(c) No5281, pages 55-70, Springer Verlag, S. Becker and F. Plasil Eds. Karlsruhe, Germany. October 2008. With talk. *ERA ranked A*
- Nguyen T.D., and Rouvrais S. **Towards a Peer-to-peer Middleware for Context Provisioning in Spontaneous Networks.** In *Proceedings of the 5th ESF-MiNEMA Workshop (Middleware for Network Eccentric and Mobile Applications)*, pages 54-57. Magdeburg, Germany. September 2007.
- Fradet P., Issarny V., and Rouvrais S. **Analysing Non-Functional Properties of Mobile Agents.** In *Proceedings of the 3rd International Conference on Fundamental Approaches to Software Engineering, FASE (in conjunction with ETAPS'00)*. LNCS (c) No1783, Springer Verlag, pages 319-333. Berlin, March 2000. With talk. *ERA ranked B*
- Rouvrais S. **Mobile Agents for Distributed Service Composition; In French: Utilisation d'agents mobiles pour la construction de services distribués.** [Ph.D. Thesis](#). University of Rennes, France. 5th July 2002.