Curriculum Vitæ

Atletiekstraat 13• Hoofddorp, Netherlands 2134CA
Phone: +31 (0)648786007 • E-Mail: p.lago@vu.nl

Personal Details

Title and full name	Dr. Patricia Lago
Date/Place of birth	▓▓▓▓▓▓▓
Nationality	▓▓▓
Current position	Full professor, Head of 'Software and Services' Research Group, Computer Science Department, Vrije Universiteit Amsterdam, The Netherlands

Research

My research is in the general field of software- and service engineering. In the past few years I shifted my main research focus to **energy-efficient and sustainable software engineering**.

My approach to academic research is characterized by **action research** driven by social- and industry-relevant research problems and exploitation of empirical research methods.

Brief summary of my research over the last five years

In 2011 I have founded and led the **Software and Services (S2) research group** at the Computer Science Department of the Vrije Universiteit Amsterdam (www.s2group.cs.vu.nl). Its mission is to advance in modeling, engineering and modernizing large and complex software-intensive systems. This mission is realized in three broad topics, S2 modeling & engineering, service networks, and energy-efficiency & sustainability.

In the past five years I have contributed to the following sub-topics, where the first two provide a foundation for the third one: my current research focus.

Software architecture and architectural knowledge: my research has initiated the notion of software architecture as architecture design decisions and rationale, and the research field on architecture knowledge management, now mainstream in the international community. Important results include the extension of the knowledge elements driving architecting with the notion of assumptions [129, 29] and rationale [126]. In the past five years, I built upon above insights and identified the existence of two distinctive architecture perspectives demanding for explicit knowledge representation, architecture as-a-process (embracing knowledge management and reasoning) and as-a-product (with focus on the "system" to be developed [8, 43, 45]). A follow-up research identified the role of social networks in architecting, and contributed with a new approach to detect and evaluate so-called organization social structures e.g. [50, 9, 10]. I am member of the IFIP-WG2.10 on Software Architecture, and Chair of the WICSA steering committee, recognizing my international scientific impact.

Service oriented software engineering: I have contributed to the area of service oriented software modeling with new insights in how to support analysis and design of service inventories, top-down from requirements to design [75]; to a new notion of legacy migration (historically associated with reverse engineering) by defining a new approach for migration to services adopting a knowledge management approach [9, 22, 69]. I have also defined the first architecture views and viewpoints, according to the IEEE/ISO/IEC standard, bringing progress in the notion of service oriented aspects in architecting service-oriented software [14].

Green and sustainable software engineering: I am pioneering the field of green software by addressing the direct and indirect impact of software and services on environmental sustainability. In my initial work I performed a number of researches to investigate the state of the art and the state of practice, and define the boundaries of this new field. Based on empirical studies, I have defined a novel ontological notation for representing green practices [71], I used it to develop an on-line library[1] of green ICT practices populated by both academic and industrial data [61, 62], and offering automated estimation of the cost-benefits of few practices. This library has helped us creating awareness on the scientific gap in software-related practices (e.g., of the 258 practices it contains, about 9 regard software and all of them focus on resource utilization).

Considering the massive migration of software, services and data to the cloud, I have investigated the state-of-the-art in energy-efficient cloud-based software, by carrying out a systematic literature survey [60, 3]. This has revealed few recurring software features that we have started generalizing into architectural strategies and tactics [56], and validating in ongoing research projects. I have also investigated the impact of software on two further aspects of environmental sustainability: economic value [63] and cloud data management [61]. The first resulted in the identification of a promising line of research in service engineering along the alignment of two dimensions of sustainability: technical- and economic sustainability. The second is under investigation and promises to reveal interesting theories about energy-aware data monitoring and strategic migration to the cloud.

I envisage the development of new knowledge, theories, quality models, and methodologies to model, engineer and modernize energy-aware software that will support our society in a sustainable manner.

Highlights of contributions to the community

- Upon invitation, I initiated in 2015 the first **track on the software engineering impact on society (SEIS) at ICSE** (the most prestigious conference in-the-field). The new track covers topics related to a.o. energy, sustainability and social aspects of SE. ICSE tracks attract on average over 200 submissions each year.

- I pioneered the field of green and sustainable software in the software engineering community. Internationally, by initiating and co-chairing the GREENS workshop series at ICSE; and by co-chairing (twice) the International Conference in ICT for Sustainability (ICT4S). Nation-wide, I have co-founded the Dutch Knowledge Network Green Software.

- During my 5-year chair of the Faculty Board for International Relationships (*FEW Commissie Internationalisering*) I could realize novel internationalization policy and strategies of the Faculty of Sciences. These resulted in a significant and stable increase in the number of **international students and international collaborations**, some funded by the prestigious Erasmus Mundus programme.

- The SHARK workshop series (2006-2012) I initiated and co-chaired on Sharing and Reusing Architectural Knowledge. This workshop **changed the notion of architecture** to a set of design decisions in the international software architecture research community, and it streamlined the related research internationally. The notion of architectural knowledge further influenced research in architecture modeling, software engineering and knowledge management, and architecture design reasoning, hence paving the way to new research directions.

---

[1] http://greenpractice.few.vu.nl

- In 2011 I have been Program co-chair of the Working IEEE/IFIP Conference on Software Architecture (WICSA – the most prestigious international conference in the field), which has been defined as yielding *the most innovative and interesting scientific program of all WICSA editions*. After that, I have been elected Chair of the WICSA Steering Committee.

Academic education

- (1996) Ph.D. in Systems Engineering and Computer Science, Politecnico di Torino, Italy, with a thesis titled "Cooperative transactions supporting the software engineering process", supervisors: Prof. Silvano Gai, Prof. M. Letizia Jaccheri, Nov. 1996.

- (1992) Master in Computer Science, University of Pisa, Italy, with a thesis titled "Embedding Configuration Management in Merlin", supervisors: Prof. Vincenzo Ambriola (University of Pisa), Prof. Wilhelm Schäfer (University of Dortmund, Germany), July 1992.

Professionalization education

I successfully attended a number of professionalization courses, including: **BKO** (Basis Kennis Onderwijs) Certification for teaching in higher education (completed in Spring 2014); Academic leadership; Higher education in multi-cultural environments.

Academic positions

Full professor, Dept. of Computer Science, Vrije Universiteit Amsterdam, The Netherlands.		Since 2015
Associate professor, Dept. of Computer Science, Vrije Universiteit Amsterdam, The Netherlands. Since April 2011 I am leader of the research group on "Software and Services".		2007-2014
Assistant professor in software engineering (tenured), Dept. of Computer Science, Vrije Universiteit Amsterdam, The Netherlands.		2003-2007
Assistant professor in software engineering (tenured), at the Dept. of Control and Computer Engineering, Politecnico di Torino, Italy.		1998-2003
Post-doctorate on the theme of software architectures for the support of multimedia systems for distance education, at the Dept. of Control and Computer Engineering, Politecnico di Torino, Italy.		1997-1998
Contract researcher at Politecnico di Torino, in the field of software distributed and object-oriented systems.		1996-1997
Ph.D. candidate, Dept. of Control and Computer Engineering, Politecnico di Torino, Italy.		1992-1996
Guest researcher at the Norwegian University of Science and Technology (NTNU, Trondheim, Norway), Dept. of Computer Science (IDI) – research		1994-1995

group of prof. Reidar Conradi.		

Grants (last update 2016)

The following enlists funded projects where I played a primary role (see column 'Role') in both proposal writing and scientific work.

The following two projects are mobility **projects for education and research collaboration**:

Title	Duration	Project budget	VU Funding	Role	Programme	Partners involved
Erasmus Mundus ECW EURECA - European Research and Educational Collaboration with ASIA	2008-2011 (48 months)	4 900 000 €	Full scholarships and living expenses for students, researchers and staff members in mobility. We hosted 22 fully funded Master students.	Co-author/ local coordinator	EC – Erasmus Mundus ECW, Lot 12	9 EU Universities (Uppsala University, University of Paderborn, University of Limerick) and 7 Asian Universities (incl. Amrita, IITK, LUMS). See http://www.mrtc.mdh.se/eureca)
Erasmus Mundus ECW EUROWEB - European Research and Educational Collaboration with Western Balkans	2011-2015 (48 months)	3 990 000 €	Full scholarships and living expenses for students, researchers and staff members in mobility.	Co-author/ local coordinator	EC – Erasmus Mundus ECW, Lot 10	9 EU Universities and 8 Western Balkan Universities (see http://www.mrtc.mdh.se/euroweb)
Erasmus Mundus EMA2SA - Erasmus Mundus Action 2 for South Africa	2012-2015	Variable, depending on mobility exchanges	Full scholarships and living expenses for Master and PhD students, and academic staff.	Participant (contact for Department of Computer Science)	EC-Erasmus Mundus Action 2	EU and South-African universities (see http://www.ema2sa.eu/applicants/partners)

The following projects are **research projects**:

Title	Duration	VU budget	VU Funding	Role	Programme	Partners involved
S-Cube - European Network of Excellence in Software Services and Systems	2008-2012 (48 months)	166 000 €	125 000 €	VU Project Leader	FP7-ICT-2007.1.2	Vrije Universiteit Amsterdam, University of L'Aquila, FBK, INRIA, Univ. Duisburg-Essen, Tilburg Univ., etc.
SAPIENSA - Service-enAbling Pre-exIsting ENterpriSe Assets	2008-2012 (48 months)	300 000 €	177 000 €	PI (VU) and project initiator	Dutch Government-NWO Jacquard Programme for software engineering and software as a service	Vrije Universiteit Amsterdam, Tilburg University, Logica
GRIFFIN - GRId For inFormatIoN	2005-2009 (48 months)	657 000 €	487 000 €	Co-author, co-investigator	Dutch Government-NWO Jacquard Programme for	Vrije Universiteit Amsterdam, University of Groningen, Philips, Astron Foundation, and

					software engineering	Logica.
about architectural knowledge						
Stimuleringsfonds joint degrees	2011-2012	30 000 €	30 000 €	Personal Grant	VUA Internal funding (to stimulate initiating new Joint programs)	Vrije Universiteit Amsterdam
Green ICT Practices	2012	20 000 €	20 000 €	Personal Grant	Innovatieregeling SURF Foundation	Vrije Universiteit Amsterdam
Gendered Innovation in Computer Science	2012-2013	20 000 €	20 000 €	Personal Grant	ECP (Platform voor de InformatieSamenleving)	Vrije Universiteit Amsterdam
Semi-automated estimation of the cost-benefits of green ICT practices	2013-2014	10 000 €	10 000 €	Personal Grant	Innovatieregeling SURF Foundation	Vrije Universiteit Amsterdam
Energising Services (EnS) – Energy Aware Services and Services for the Energy Sector	2013-2014	Full mobility costs	Full mobility costs	Partner	Dutch Government - NWO Joint Scientific Thematic Research Programme (JSTP) 045.011.008	Universities in China (Tsinghua Univ., Univ. of Science and Tech. of Beijing) and the Netherlands (VU Univ. Amsterdam, Univ. of Groningen, TU Eindhoven, Univ. of Twente, Univ. of Tiburg)
MRA Cluster Green Software	2013-2014	250 000 €	250 000 €	Partner	EFRO (European funding of EU regions)	Vrije Universiteit Amsterdam, University of Amsterdam, Amsterdam Univ. of Applied Sciences, SURFsara, SIG, Schuberg Philis, Equinix, Green IT Amsterdam
BigData2Nets	2014		8 000 €	Co-PI	Amsterdam Data Science (Seed project)	Vrije Universiteit Amsterdam, University of Amsterdam
Big Data for Green Software	2015		8 000 €	Co-PI	Amsterdam Data Science (Seed project)	Vrije Universiteit Amsterdam, University of Amsterdam
Large-scale Data Gathering on Software Energy Efficiency	2015-2016		8 000 €	Co-PI	Amsterdam Data Science (Seed project)	Vrije Universiteit Amsterdam, University of Amsterdam
MRA Greening the Cloud	2014-2016		81 000 €	Partner	EFRO (European funding of EU regions)	Vrije Universiteit Amsterdam, University of Amsterdam, Amsterdam Univ. of Applied Sciences, Green IT Amsterdam, about 10 companies among cloud providers and cloud software vendors
GreenServe	2016-2018		50 000 €	Co-PI	RVO	Vrije Universiteit Amsterdam, Amsterdam Univ. of Applied Sciences, Green IT Amsterdam, Certios
Total VU budget / funding			1 254 250 €			

Before moving to the Netherlands, I have been leading the Software Engineering group at Politecnico di Torino, Dept. of Control and Computer Engineering for about 3 years: in such period I have obtained external funding for both EU projects, Italian national projects, and industrial research contracts (e.g. with Motorola, Telecom Italia) as well as industrial fellowships (CISCO systems, TINA, and Eurescom).

Teaching

I have been teaching as main lecturer since 1996. I have been tutoring various students in their Bachelor and/or Master thesis in the software- and service engineering related topics, and in their Literature studies in preparation of the Master project. Some have been carried out in collaboration with other universities (both nationwide and internationally), industrial companies or research institutes. I have developed various courses, both for industry (like Telecom Italia, Olivetti, Lufthansa) and in academic setting.

I also actively contribute in the definition of various education programs. I worked at the definition of the new **Computer Science Master program** (from academic year 2013-2014), with special focus on two tracks: Software Engineering and Internet and Web Technology (with special focus on software services and cloud computing). In have also designed the track **Software Engineering and Green IT** (from academic year 2014-2015).

I am **teaching**/have taught the following (since at the Vrije Universiteit Amsterdam) that I developed in full (excluding Software Architecture that I taught with prof. Hans van Vliet and for which I developed my own lectures):

- Software Architecture (Master, 400170, 6 ECTS)   Since 2017/18
- Service Oriented Design (Master, 405061, 6 ECTS)   Since 2010/11
- Developing Services for the Cloud (Master, in collaboration with IBM Benelux, 405074, 6 ECTS)   Since 2010/11
- Software Modeling (Bachelor, 401016, 6 ECTS)   2009/10-2016/17
- Project Web Systems (Bachelor, 401033, 3 ECTS, coordination)   2010/11
- Advanced Topics in Software Design (Master, 400378, 6 ECTS)   2005/06-2009/10
- Software Architecture (Master in Software Engineering, collaboration VUA-University of Amsterdam)   2002/03-2006/07
- Project Software Engineering (Bachelor, 400067, 8 ECTS)   2002/03-2006/07
- Software Engineering (Bachelor, 400071, 4 ECTS)   2002/03-2008/09

In 2013/2014 I have also re-designed, and still coordinate, the Master course 'Literature Study and Seminar' (6 ECTS).

I am **coordinator** of the following Master programs:

- Software Engineering Track, Master in Computer Science, Vrije Universiteit Amsterdam   Since 2014
- GSEEM: International Track Master in Computer Science, Program in Global Software Engineering (Double Degree with University of L'Aquila, Italy)   Since 2008
- Erasmus Mundus EUROWEB (European Research and Educational Collaboration with Western Balkans)   2011-2015
- Erasmus Mundus EURECA (European Research & Education Collaboration with Asia)   2008-2011

Master students

On average I tutor (as first reader only, and excluded tutoring as second reader) 8-10 students/year in their Master thesis in Computer Science and/or Information Sciences, and 2-4 students/year in their Bachelor thesis in Computer Science. I also regularly tutor students in their Literature Study module (about the same number) and Industrial internship.

Other academic activities

National Boards

- **[Since 2017]** Management board **IPN** (ICT Research Platform Netherlands) www.ictonderzoek.net
- **[Since 2015]** Vice-chair **VERSEN** (Dutch National Association for Software Engineering) www.versen.nl

Committees @ Vrije Universiteit Amsterdam

University level:
- **[2012-2013]** Member of the Programma Commissie Internationalisering (PCI), Vrije Universiteit Amsterdam
- **[2011-2013]** Member of the Erasmus Mundus working group, Vrije Universiteit Amsterdam

Faculty level:
- **[2012-2016]** Contact point and coordinator for the Dept. Computer Science for the new building (**NU.VU**) that will be delivered end 2018.
- **[2013]** Member of the inter-faculty Committee for the internationalization of the Faculty of Science.
- **[2007-2012]** Chair of the Faculty Board for International Relationships (Commissie Internationalisering), Faculty of Science, Vrije Universiteit Amsterdam. **Since 2003** I have been member of this committee, representing the Computer Science Department.

Department level:
- **[Since 2010]** Member of the Science Council, Dept. Computer Science, Vrije Universiteit Amsterdam
- **[Since 2010]** Member (and Chair in period **2012-2016**) of the Education Committee Information Sciences (Bachelor and Master), Dept. Computer Science, Vrije Universiteit Amsterdam.

Editorial Boards and Working Groups

- **[Since 2010]** Senior Associate Editor Elsevier Journal of Systems and Software
- **[Since 2012]** Member editorial board Wiley Journal of Software: Evolution and Process[2]
- **[2013-2016]** Member editorial board the Hindawi Scientific World Journal (open access)
- **[Since 2010]** Member of the IFIP 2.10 Working group on Software Architecture
- **[Since 2011]** Member of the IFIP 2.14 Working group on Services-based Systems

---

[2] New name from 2012.

Referee for international funding agencies

- External referee: Italian Ministry of Education, University and Research (MIUR).
- External referee: National Agency for the Evaluation of Universities and Research Institutes (ANVUR), Italy.
- External referee: Austrian Science Fund (FWF).
- External referee: Funding agency IWT-Vlaanderen (www.iwt.be)
- External referee: Vinnova Swedish Innovation Agency
- External referee: NSERC Research Council of Canada

Steering Committees and Chairs

Steering committees:

- **[2011-2016]** Chair of the IEEE/IFIP WICSA Steering Committee (two mandates)
- **[Since 2013]** Member of ECSA Steering Committee
- **[Since 2014]** Member of ICT4S Steering Committee

Scientific conferences:

- **[2018]** Program co-chair ICSE track on Software Engineering Education and Training (SEET)
- **[2017]** Workshop co-chair of ACM ESEC/FSE
- **[2016]** Program co-chair of the International conference on ICT 4 Sustainability ICT4S
- **[2015]** Program co-chair of IEEE/IFIP WICSA
- **[2015]** Chair of (first) ICSE track on Software Engineering in Society
- **[2014]** Program co-chair of the International conference on ICT 4 Sustainability ICT4S
- **[2011]** Program co-chair of IEEE/IFIP WICSA
- **[2009]** Local chair of ACM ESEC/FSE

Other scientific events:

- Co-organizer of international workshops incl.: AMS 2017-2018, SHARK 2006-2011, PESOS 2012, SEE 2010, AGSE 2011 and GREENS 2012-2014.

Program Committees (main)

- PC member of the main international events in software- and service engineering, software architecture and related green IT fields: ICSE (2014; 2018), ICT4S (2013-2018), ICSOC (2007, 2009-2014), ServiceWave (2010, 2011), IESS (2010-2012, 2014), IEEE ICSA (2017-2018), IEEE/IFIP WICSA (2009-2016), QoSA (2006-2008, 2014), ECSA (2009-2017), IEEE/ACM ICSE NIER (New Ideas and Emerging Results) (2012-2013), IEEE/ACM ICSE SEET (Software Engineering Education and Training) (2013), ICGSE (2012), ICSR (2013-2015), SEAGC @SAC (2013-2014), PRO-VE 2014.
- Regular reviewer of journals including: Elsevier Environmental Modeling and Software, IEEE Transactions on Software Engineering, IEEE Software, Elsevier Journal of Systems and Software, Springer Journal of Service Oriented Computing and Applications, Elsevier Journal of Information and Software Technology, Springer Computing.
- PC member of international conferences related to our area of research (since 2009): CAiSE 2009, EIS (2010-2011), ICSOB (2011-2013), IEEE QSIC 2012, PRET (2009, 2010, 2012-2013), ISARCS (2013).

- PC member of international workshops (since 2009): CAiSE Doctoral Symposium 2009, LMSA 2009 (@ IEEE/ACM ICSE), ECSA Doctoral Symposium 2010, ISARCS 2010 (@ CompArch), SOAME 2010 (@ CSMR), FoSEC 2011 (@ IEEE Services), VARSA (2011-2012), Knowing 2009-2010 (@ ICGSE), TwinPeaks 2012 (@ IEEE RE Conf.), Empirical Research in SOSE 2012 (@ IEEE Services), RE4SuSy 2013-2014 (@ RE), PESOS 2012-2014.

Other National academic activities

- **[2009-2016]** Member of the editorial board SDU Informatie (Dutch magazine) for the yearly special issue on Software Architecture
- **[Since 2009]** Member of the core team of the Dutch Knowledge Network Green Software (partially funded by Agentschap NL)
- **[2009-2016]** Member of the Steering Committee Dutch Software Architecture Conference
- **[2009-2017]** Member of the Consortium Green IT Amsterdam

Scientific Publications

- To date, I have **published** more than 120 papers, many of which are in the top publication venues in my field. All publications listed appeared in peer-reviewed journals, books or conference proceedings.
- My profile on Google Scholar [14 December, 2017]: h-index 31 (22 in the past 5 years), with over 3700 citations and i10-index 90 (69 in the past 5 years).
- For the benefit of reviewers working in different fields, it should be pointed out that in computer science the most influential publications are in proceedings of refereed conferences, and in few well-established scientific journals. Indeed, according to CiteScholar, the top 5 publication venues sorted by impact factor (IF) are two conferences (**ACM/IEEE ICSE** w. IF 7.56 and FASE w. IF 3.47) and three journals (**ACM TOSEM** w. IF 1.27, **IEEE TSE** w. IF 1.98, **Springer Empirical Software Engineering Journal** w. IF 1.85 – IF's as of 2011). I have published in the top 4 (as FASE is not in my area of research). In addition, I recently published on the **ACM Computing Surveys** journal (w. IF 4.53), the by-far top-cited journal about surveys in my field.
- I acted as **Guest Editor** for 3 special issues (on Springer Empirical Software Engineering Journal, Elsevier Journal of Systems and Software, and IEEE Software), and 5 special issues on Software Architecture (2009-2013) in the magazine SDU Informatie (in Dutch).

- I co-edited two **books** published by Springer: 'Software Architecture Knowledge Management - Theory and Practice' (2009), and 'Relating Requirements and Architecture' (2011).

Current PhD students

1. Roberto Verdecchia (Double PhD degree Vrije Universiteit Amsterdam & GSSI, Italy)
2. Eoin Grua (innovation PhD program, collaboration software engineering and computational intelligence)
3. Paolo di Francesco (with GSSI, Italy)
4. Gianantonio Me (Double PhD degree Vrije Universiteit Amsterdam & UCLM, Spain)
5. Robert Deckers

6. Albert Hankel (with SURFsara)

7. Fahimeh Alizadeh (innovation PhD program, Vrije Universiteit Amsterdam & University of Amsterdam)

Former PhD students

1. Grace Lewis (with Software Engineering Institute, Carnegie Mellon University; June 2016)

2. Giuseppe Procaccianti (Double PhD degree Vrije Universiteit Amsterdam & Politecnico di Torino, May 2015)

3. Damian A. Tamburri (Vrije Universiteit Amsterdam, Mar. 2014)

4. Maryam Razavian (Vrije Universiteit Amsterdam, Apr. 2013)

5. Viktor Clerc (Vrije Universiteit Amsterdam, Dec. 2011)

6. Qing Gu (Vrije Universiteit Amsterdam, Oct. 2011)

7. Rik Farenhorst (Vrije Universiteit Amsterdam, Oct. 2009)

8. Remco de Boer (Vrije Universiteit Amsterdam, Oct. 2009)

9. Andrea Capiluppi (Politecnico di Torino, Italy 2005)

10. Paolo Falcarin (Politecnico di Torino, Italy, 2004)

11. Riccardo Scandariato (Politecnico di Torino, Italy, 2004)

Ph.D. promotion committees

I am (or have been) member of the following PhD promotion committees:

1. John Klein (supervised by Prof. Hans van Vliet, Vrije Universiteit Amsterdam, 2017)

2. Dilhan J. Thilakarathne (supervised by Prof. J. Treur and Dr. Tibor Bosse, VU, June 2016).

3. Christina Manteli (supervised by Prof. Hans van Vliet & Prof. Bart van den Hooff, Vrije Universiteit Amsterdam, Mar. 2014)

4. Ben van Gameren (supervised by Prof. D.M. van Solingen and Prof. Arie van Deursen, TU Delft, the Netherlands, Jun. 2014).

5. Ivan Razo-Zapata (supervised by Prof. Hans Akkermans, Dr. Jaap Gordijn, Dr. Pieter de Leenheer, Vrije Universiteit Amsterdam, the Netherlands, May 2014).

6. Marcin Nowak (supervised by Prof. Cesare Pautasso, Università della Svizzera Italiana, Switzerland, 2014).

7. Dinh Khoa Nguyen (supervised by Prof. Willem-Jan van den Heuvel and Prof. Mike Papazoglou, Tiburg University, the Netherlands, Nov. 2013).

8. Eric Bouwers (supervised by Prof. Arie van Deursen, TU Delft and J. Visser, RU Nijmegen, the Netherlands, Jun. 2013).

9. Nick Palmer (supervised by Prof. Henri Bal and Dr. Thilo Kielmann, Vrije Universiteit Amsterdam, the Netherlands, Oct. 2012).

10. Eltjo Poort (supervised by Prof. Hans van Vliet, Vrije Universiteit Amsterdam & Prof. Peter H.N. de With (TU/Eindhoven, the Netherlands June 2012).

11. Ivano Malavolta (supervised by Prof. Henry Muccini, University of L'Aquila, Italy, Jan. 2012).

12. Bartosz Michalik (supervised by Prof. T. Holvoet and Prof. D. Weyns, Katholieke Universiteit Leuven, Belgium, February 2012).

13. Hongyu Pei-Breivold (supervised by Prof. Ivica Crnkovic, Malardalen University, Sweden, 2011.

14. Odd Petter Nord Slyngstad (supervised by Prof. Reidar Conradi, Norwegian University of Science and Technology (NTNU), Norway, 2011) [Opponent].

15. Håkan Gustavsson (supervised by Prof. Jakob Axelsson, Malardalen University, Sweden, 2011) [PhD grading committee].

16. Hongyu Pei Breivold (licentiate thesis supervised by Prof. Ivica Crnkovic, Malardalen University, Sweden, 2009) [Opponent].

17. Jose L. Arciniegas (supervised by Prof. Juan Carlos Dueñas, Universitad, UPM, Spain, 2009).

18. M. Ali Babar (supervised by Prof. Ross Jeffery and Prof. Ian Gorton, University of New South Wales, Australia, Mar. 2007).

19. Felix Cuadrado Latasa (supervised by Prof. Juan Carlos Duenas, UPM, Spain, 2006).

Guest lectures, workshops and seminars (updated until 2016)

- [Apr. 2014] Bird of a Feather Session on "Energy-aware software architectures: what the challenges for research? ", at IEEE/IFIP Working Conference on Software Architecture, Sydney, Australia.

- [Jan. 2014] Invited talk "The Added Value of Gender diversity in the IT profession", Oracle Women Leadership Roundtable.

- [Dec. 2013] Invited lecture "Agile Software Development", NTNU, Trondheim, Norway.

- [March 2013] Invited talk "An open online library of Green ICT practices", GreenITnet EU project, New Energy Docks, Amsterdam, the Netherlands.

- [Feb. 2013] Invited talk "Green ICT Practices", Joint meeting IFIP WG 9.2 on Social Accountability and Computing and IFIP WG 9.9 on ICT and Sustainable Development, Zurich, Switzerland.

- [Dec 2012] Seminar "Supporting GSE: from Organizational Social Structures to Agile Service Networks", Free University of Bolzano, Italy.

- [Dec. 2012] Invited speaker "Social Structures in Software Engineering", University of Groningen, the Netherlands.

- **[Nov. 2012]** Seminar "Supporting GSE Communities with Agile Service Networks", Centrum Wiskunde & Informatica (CWI), Amsterdam, the Netherlands.

- **[Oct. 2012]** Invited lecture "Green IT", students Bachelor Computer Science and Bachelor Information Management and Media.

- **[Mar. 2012]** Invited speaker "The Shrinking Woman in Computer Science", conference Every Woman Digital!, organized by VHTO, hosted by IBM Amsterdam.

- **[Dec. 2011]** Invited speaker on "The role of women in Computer Science, 30 Year Celebration of Computer Science Education in Amsterdam, at De Rode Hoed, Amsterdam

- **[Nov. 2011]** Invited talk "From Green Strategies To Green Actions: how to make software greener", at Seminar series on "Future Challenges in Software and Systems Architecture Research" at Mälardalen University and ABB Corporate Research, Vasteras, Sweden.

- **[Nov. 2011]** Invited 2-days workshop (with Prof. Antony Tang) "Software Architecture Design Reasoning", Lufthansa, Frankfurt, Germany.

- **[Oct. 2011]** First Workshop Kick-start Knowledge Network Green Software, on "From Green Strategies to Green Actions: how, which and why?", hosted by TNO.

- **[Aug. 2011]** Seminar "on Green Architecting", at Software Improvement Group (SIG), Amsterdam, the Netherlands.

- **[Jun. 2011]** Invited talk "A Green Knowledge Incubator", at Workshop of the Consortium Green IT Amsterdam, on "Green Software Architecture", hosted by CWI.

- **[Jun. 2011]** Invited lightening talk "How to make Architectures Greener", at IEEE/IFIP WICSA Conference & CompArch 2011, Boulder, CO, USA.

- **[Oct. 2010]** Invited talk "Education in Green ICT - vision and current status", Symposium on "Duurzame ontwikkeling in ICT onderwijs" (Sustainable development in ICT education, in Dutch) at SurfFoundation. Utrecht.

Appendix A: List of Selected Publications (last update: 2016)

(Classified according to the publication type, in chronological order of publication)

Most of the publications involved PhD students co-supervised by Lago. In such cases, Lago has been the Principal investigator of the Project and has supervised the PhD student during Research design and paper writing. In all other cases, Lago has been either principal investigator or peer contributor. Given the large number of publications, detailed statements can be provided, if needed, case by case. The complete list of publication is online on Google Scholar and the VU Research Portal.

Journals (under submission and/or revision)

1. (2014) Lago, P., Gu, Q. & Bozzelli, P.: A systematic literature review of green software metrics. VU Technical Report.
2. (2015) Lago, P, Aklini Kocak, S, Crnkovic, I & Penzenstadler, B.: Framing Sustainability as a Property of Software Quality, **Communications of the ACM**, vol. 58(10): 70-78.
3. Procaccianti, G., Lago, P. & Bevini, S.: A systematic literature review on Energy Efficiency in Cloud Software Architectures. **Elsevier Sustainable Computing** *(SUSCOM)*, vol 7, no. 9, pp. 2-10.
4. Razavian, M., Tang, A., Capilla, R. & Lago, P.: In Two Minds: How Reflections Influence Software Architecture Design Thinking. **Elsevier Journal of Systems and Software**, (under submission).
5. (2016) Razavian, M, Tang, A, Capilla, R & Lago, P: 'In Two Minds: How Reflections Influence Software Architecture Design Thinking: how reflections influence software design thinking' **Wiley Journal of Software: Evolution and process**, vol. 28, no. 6, pp. 394-426.
6. Razavian, M., Lago, P.: Migration to Services: A Systematic Literature Review, **Springer Journal on Service Oriented Computing and Applications**, (under submission).
7. Fernandez, H.; Procaccianti, G.; Lago, P.: Economic Aspects of Green ICT, in C. Calero & M. Piattini (eds.), *Green in Software Engineering*. Springer International Publishing, pp. 107-127, **Springer**, 2015.

International (refereed) Journals

8. (2014) Lago, P., Malavolta, I., Muccini, H., Pelliccione, P. & Tang, A.: The Road Ahead for Architectural Languages. **IEEE Software**, vol. 32(1):98-105.
9. (2014) Lago, P., Meyer, N., Morisio, M., Muller, H. & Scanniello, G.: Leveraging Energy Efficiency to Software Users. **SIGSOFT Software Engineering Notes**, 39(1), pp: 36-38.
10. (2014) M. Razavian, P. Lago. A Lean & Mean Strategy: A Data Migration Industrial Study, **Wiley Journal of Software: Evolution and Process**, 26(2), 141-171.
11. (2013) S. Lane, Gu, Q., P. Lago, I. Richardson. Towards a Framework for the Development of Adaptable Service-Based Applications, **Springer Journal on Service Oriented Computing and Applications**, vol. 8(3): 239-257.
12. (2013) I. Malavolta, P. Lago, H. Muccini, P. Pelliccione, and A. Tang. What industry needs from architectural languages: An industrial survey, **IEEE Trans. on Software Engineering**, 39(6), 869-891.
13. (2013) Tamburri, D.A., Lago, P., van Vliet, H., Organizational Social Structures for Software Engineering, **ACM Computing Surveys**, 46(1), 1-35.
14. (2013) Tamburri, D.A., Lago, P., van Vliet, H., Uncovering latent social communities in software development, special issue on *Bridging Software Communities through Social Networking*, **IEEE Software**, 30(1), 29-36.
15. (2013) Gu, Q.; Cuadrado, F.; Lago, P. & Duenas, J. C., 3D Architecture Viewpoints on Service Automation, **Journal of Systems and Software**, Elsevier, 85(6), 1307–1322
16. (2012) Lago, P., Hilliard, R., Special issue: papers from the 9th Working IEEE/IFIP Conference on Software Architecture (WICSA 2011), **Elsevier Journal of Systems and Software**, 85(9):1969–2192

17. (2012) Tekinerdogan, B.; Cetin, S.; Babar, M. A.; Lago, P. & Makio, J., Architecting in Global Software Engineering, In **SIGSOFT Software Engineering Notes**, ACM Press, 2012, 37(1), 7

18. (2011) Babar, M. A.; Lago, P. & van Deursen, A., Empirical research in software architecture: opportunities, challenges, and approaches, **Empirical Software Engineering Journal**, Springer Verlag, 2011, 16(5), 539-543

19. (2011) Gu, Q. & Lago, P., Guiding the selection of service-oriented software engineering methodologies, **Journal on Service Oriented Computing and Applications**, Springer London, 2011, 5, 203-223

20. (2011) Lago, P.; Muccini, H. & Babar, M. A., An empirical study of learning by osmosis in global software engineering, **Journal of Software Maintenance and Evolution: Research and Practice**, John Wiley & Sons, Ltd, 2011, 15 pages (online, in press)

21. (2011) Hoorn, J. F.; Farenhorst, R.; Lago, P. & van Vliet, H., The Lonesome Architect, **Journal of Systems and Software**, Elsevier, 2011, 84, 1424-1435

22. (2010) Lago, P.; Avgeriou, P. & Hilliard, R., Guest Editors' Introduction: Software Architecture: Framing Stakeholders' Concerns, **IEEE Software**, IEEE Computer Society, 2010, 27(6), 20-24

23. (2010) Razavian, M. & Lago, P., Understanding SOA Migration Using a Conceptual Framework, **Journal of Systems Integration**, 2010, 1(3), 33-43

24. (2009) Gu, Q. & Lago, P., Exploring Service-Oriented System Engineering Challenges: A Systematic Literature Review, **Journal on Service Oriented Computing and Applications**, Springer, 2009, 3, 171-188

25. (2009) Babar, M. A. & Lago, P. Guest Editors' Introduction: Design Decisions and Design Rationale in Software Architecture, **Journal of Systems and Software**, Elsevier, Special Issue: Architectural Decisions and Rationale, 2009, 82, 1195-1197

26. (2009) Lago, P., Muccini, H., van Vliet, H., A Scoped Approach to Traceability Management, **Journal of Systems and Software**, Elsevier, Vol. 82(1), 2009, pp. 168-182.

27. (2008) Montesi, M., Lago, P., Software Engineering Article Types: An Analysis of the Literature, **Journal of Systems and Software**, Elsevier, Vol. 81(10), 2008, pp. 1694-1714.

28. (2008) Lago, P., Muccini, H., Beus-Dukic, L., Crnkovic, I., Punnekkat, S., GSEEM: Teaching Software Engineering in a European and Global Setting, **International Journal of Engineering Education** (Special Issue on Trends in Software Engineering Education), Vol. 24 (4), 2008, 19 pages.

29. (2007) Farenhorst, R., Lago, P., van Vliet, H. EAGLE: Effective Tool Support for Sharing Architectural Knowledge, **International Journal of Cooperative Information Systems** (IJCIS), Vol. 16(3-4), Sep. 2007, World Scientific Publishing, pp. 413-437.

30. (2006) Roeller, R., Lago, P., van Vliet, H., Recovering architectural assumptions, **Journal of Systems and Software**, Elsevier, Vol. 79(4), 2006, pp. 552-573.

31. (2005) Niemelä, E., Lago, P., Kalaoja, J., Towards an Architectural Knowledge Base for Wireless Service Engineering, **IEEE Transactions for Software Engineering**, Vol. 31(5), May 2005, pp. 361-379.

32. (2003) Lago, P., Matinlassi, M., Niemelä, E., Architecture-Centric Approach to Wireless Service Engineering. **IEC Annual Review of Communications**. Vol. 56, Copyright 2003, ISBN1-931695-22-9.

33. (2001) P. Lago, C.A. Licciardi, A. Cuda, Internet boosts IN towards new advanced services, In **IEC Annual Review of Communications**, Vol. 54, Copyright 2001, ISBN 0-933217-86-2.

34. (2001) P. Lago, C.A. Licciardi, G. Canal, A. Andreetto, An architecture for IN-Internet hybrid services. In **Computer Networks Journal**, Special Issue on Intelligent Networks and Internet Convergence, T. Magedanz, H. Rudin, I. Akyildiz (Eds.), Elsevier, Vol. 35(5), April 2001, pp. 537-549.

35. (1998) Jaccheri, M.L., Lago, P., Picco, G.P. Eliciting Software Process Models with the E3 Language. In **ACM Transactions on Software Engineering and Methodology** (TOSEM), Vol. 7(4), Oct. 1998, 368-410.

36. (1997) P. Lago, M.L. Jaccheri, Cooperation in Software Process Models (La cooperazione nei modelli di processo software) (in Italian). In **Sinergie**, special issue section "Ricerche e Studi" (Research and Studies), L. Colazzo and E. Zaninotto (Eds.), n. 3, Jun. 1997.

National (refereed) Journals

37. (2013) Bierman, H.; Lago, P.; van Rijn, R. & Poppe, S., Guest Editors' Introduction: De Toekomst van Architectuur, in **Informatie**, SDU, 55(10)
38. (2012) Bierman, H.; Lago, P.; van Rijn, R. & Poppe, S., Guest Editors' Introduction: Could en Architectuur, in **Informatie**, SDU, 56(11)
39. (2011) Bierman, H.; Huijbers, P.; Lago, P.; Millis, K. & Poppe, S., Guest Editors' Introduction: Succesvolle inrichting van architectuur, in **Informatie**, SDU, 2011, 53(9)
40. (2010) Bierman, H.; Huijbers, P.; Lago, P.; Millis, K. & Poppe, S., Guest Editors' Introduction: Architectuur en Visie, Editorial Special Issue on Software Architecture, **Informatie**, SDU, Nov. 2010, 52
41. (2009) Poppe, S., Bierman, H., Huijbers, P., Lago, P., Teeuwen, P., Architectuur Draagt bij!, Editorial Special Issue on Software Architecture, **Informatie**, SDU, Nov. 2009, 51, 16-17
42. (2009) Farenhorst R., Hoorn, J.F., Lago, P., van Vliet, H., De architect als eenzame cowboy, **Informatie**, SDU, Nov. 2009, 51, 24-29

Books

43. (2011) P. Avgeriou, J. Grundy, J.G. Hall, P. Lago, I. Mistrik (Eds), Relating Software Requirements and Architectures, **Springer-Verlag**, ISBN 978-3-642-21000-6, 2011, 387
44. (2009) Babar, M. A.; Dingsøyr, T.; Lago, P. & van Vliet, H. (eds.) Software Architecture Knowledge Management: Theory and Practice, **Springer-Verlag**, 2009, 279

Book chapters

45. (2014) Lago, P.; Gu, Q.; Bozzelli, P., A Decision Making Model for Adopting Green ICT Strategies, in C. Calero & M. Piattini (eds.), Software Sustainability, Springer Verlag, 2014 (to appear).
46. (2011) Avgeriou, P.; Grundy, J.; Hall, J. G.; Lago, P. & Mistrik, I., Emerging Issues in Relating Software Requirements and Architecture, in "Relating Software Requirements and Architecture", **Springer-Verlag**, 2011, 303-306
47. (2011) Grundy, J.; Lago, P.; Avgeriou, P.; Hall, J. G. & Mistrik, I., Theoretical Underpinnings and Reviews, in "Relating Software Requirements and Architecture", **Springer-Verlag**, 2011, 13-15
48. (2011) Lago, P.; Avgeriou, P.; Grundy, J.; Hall, J. G. & Mistrik, I., Tools and Techniques, in "Relating Software Requirements and Architecture", **Springer-Verlag**, 2011, 87-89
49. (2010) Gu, Q.; Cuadrado, F.; Lago, P. & Duenas, J. C.; Papazoglou, M.; Pohl, K.; Parkin, M. & Metzger, A. (ed.), Architecture Views illustrating the Service Automation Aspect of SOA, in Service Research Challenges and Solutions for the Future Internet: S-Cube - Towards Engineering, Managing and Adapting Service-Based Systems, **Springer-Verlag**, 2010, LNCS 6500, 339-372
50. (2010) Lago, P.; Farenhorst, R.; Avgeriou, P.; de Boer, R.; Clerc, V.; Jansen, A. & van Vliet, H. Finkelstein, A., The GRIFFIN Collaborative Virtual Community for Architectural Knowledge Management, in: van der Hoek, A.; Grundy, J.; Mistrik, I. & Whitehead, J. (ed.) Collaborative Software Engineering, **Springer-Verlag**, 2010, 195-218
51. (2009) Lago, P., Establishing and Managing Knowledge Sharing Networks, in: Babar, M. A.; Dingsøyr, T.; Lago, P. & van Vliet, H. (ed.) Software Architecture Knowledge Management - Theory and Practice, **Springer-Verlag**, 2009, 113-131
52. (2009) van Vliet, H.; Avgeriou, P.; de Boer, R. C.; Clerc, V.; Farenhorst, R.; Jansen, A. & Lago, P., The GRIFFIN Project: Lessons Learned, in: Babar, M. A.; Dingsøyr, T.; Lago, P. & van Vliet, H. (ed.) Software Architecture Knowledge Management - Theory and Practice, **Springer-Verlag**, 2009, 137-154
53. (2007) P. Lago, H. van Vliet, Software Architecture for Experimental Robotics. In Software Engineering for Experimental Robotics, Series: Springer Tracts in Advanced Robotics, Vol. 30, Brugali, Davide (Ed.), **Springer-Verlag**, March 2007, XVII, ISBN: 978-3-540-68949-2.

54. (2006) P. Lago et al., Software Architecture of Wireless Services, in Developing services for the Wireless Internet, Morisio, M. and Torchiano, M. (Eds.), **Springer Science**, pages 70-99.

55. (2001) P. Lago, Rendering Distributed Systems in UML. In Unified Modeling Language: Systems Analysis, Design, and Development Issues, K. Siau and T. Halpin (Eds.), **Idea Group Publishing**, ISBN 1-930708-05-X, Copyright 2001, pages 350.

56. (2000) P. Lago, G. Canal, Large-Scale Service Engineering Based on Object-Oriented Modeling Techniques. In On the Way to the Information Society, T. Magedanz, et. al. (Eds.), **IOS Press**, ISBN 1-58603-007-8, Copyright 2000, pages 174-190.

Conferences

57. (2014) Procaccianti, G., Lago, P. & Lewis, G.A., Green Architectural Tactics for the Cloud. In Proceedings of the 11th Working **IEEE/IFIP** Conference on Software Architecture (WICSA), 4 pages.

58. (2014) Tamburri, D.A., Lago, P., Dorn, C. & Hilliard, R., Architecting in Networked Organizations. In Proceedings of the 11th Working **IEEE/IFIP** Conference on Software Architecture (WICSA), 4 pages.

59. (2014) Razavian, M., Lago, P. & Gordijn, J., Why is Aligning Economic- and IT Services so Difficult? In International Conference on Exploring Services Science (IESS), **Springer-Verlag**, Feb. 2014, 15 pages.

60. (2013) D.A. Tamburri, R.C. De Boer, E. Di Nitto, P. Lago, H. van Vliet, Dynamic Networked Organizations for Software Engineering, ESEC/FSE – Social Software Engineering workshop series, **ACM**, Aug. 2013.

61. (2013) G. Procaccianti, S. Bevini, P. Lago, Energy Efficiency in Cloud Software Architectures, EnviroInfo Conference, Aachen: Shaker Verlag, 291-299, Sep. 2013

62. (2013) Q. Gu, P. Lago, S. Potenza, Delegating Data Management to the Cloud: A Case Study in a Telecommunication Company, 7th Symposium on the Maintenance and Evolution of Service-Oriented and Cloud-Based Systems (MESOCA), **IEEE**, collocated with ICSM, 8 pages, Oct. 2013

63. (2013) Q. Gu, P. Lago, H. Muccini, S. Potenza, A Categorization of Green Practices used by Dutch Data Centers. In 3rd International Conference on Sustainable Energy Information Technology (SEIT), Halifax, Canada, **Elsevier**, Jun. 2013.

64. (2013) Q. Gu, P. Lago, Estimating the Economic Value of Green ICT Practices, In International Conference on Software Reuse (ICSR), Pisa, Italy, **Springer**, June 2013.

65. (2013) D.A. Tamburri, P. Lago, H. van Vliet, Service Networks for Development Communities, at Int. Conf. on Software Engineering (ICSE), NIER track on New Ideas and Emerging Research, **ACM/IEEE**, May 2013.

66. (2013) D.A. Tamburri, M. Razavian, P. Lago, Teaching Software Design With Social Engagement, 26th Conference on Software Engineering Education & Training (CSEE&T), San Francisco, USA, **IEEE Computer Society**, May 2013.

67. (2013) D.A. Tamburri, P. Kruchten, P. Lago, H. van Vliet, What is Social Debt in Software Engineering?. In 6th International Workshop on Cooperative and Human Aspects of Software Engineering (CHASE) at ICSE, 4 pages. **ACM/IEEE**, May 2013.

68. (2013) A. Aldris, A. Nugroho, P. Lago, and J. Visser. Measuring the degree of service orientation in proprietary SOA systems. In IEEE International Symposium on Service-Oriented System Engineering, 12 pages. **IEEE Computer Society**, March 2013.

69. (2012) D. A. Tamburri, E. di Nitto, P. Lago, and H. van Vliet. On the nature of the GSE organizational social structure: an empirical study. In proceedings of the 7th IEEE International Conference on Global Software Engineering, pages 10. **IEEE Computer Society**, Aug. 2012.

70. (2012) M. Razavian and P. Lago. A viewpoint for dealing with change in migration to services. In Joint Working IEEE/IFIP Conference on Software Architecture & 6th European Conference on Software Architecture, pages 201–205. **IEEE Computer Society**, 2012.

71. (2012) M. Razavian and P. Lago. A lean and mean strategy for migration to services. In WICSA/ECSA 2012 Proceedings Companion Volume, pages 61–68. **ACM Press**, Sept. 2012.

72. (2012) Q. Gu, P. Lago, and S. Potenza. Aligning economic impact with environmental benefits: A green strategy model. In Workshop on Green and Sustainable Software (GREENS), volume ICSE Companion, pages 62–68. **IEEE Computer Society**, Jun. 2012.

73. (2012) Razavian, M., Tamburri, D.A., Gu, Q., Lago, P., Modeling to support communication and engineering of service-oriented software. In First International Workshop on European Software Services and Systems Research - Results and Challenges (S-Cube 2012) at ICSE, pages 8–9. **IEEE**, 2012

74. (2012) E. D. Nitto, D. Meilaender, S. Gorlatch, A. Metzger, H. Psaier, S. Dustdar, M. Razavian, D. A. Tamburri, and P. Lago. Research challenges on engineering service-oriented applications. In First International Workshop on European Software Services and Systems Research - Results and Challenges (S-Cube 2012), pages 14–20. **IEEE**, 2012.

75. (2012) Tamburri, D. A.; Lago, P. & van Vliet, H., Going Global With Agile Service Networks, Proceedings of the 24th International Conference in Software Engineering - ICSE, **IEEE Computer Society**, 2012, 1-4 (Doctoral Symposium)

76. (2012) Lago, P. & Razavian, M., A Pragmatic Approach for Analysis and Design of Service Inventories, ICSOC 2011 Workshop Proceedings (WESOA11), **Springer-Verlag**, 2012, 10

77. (2011) Lago, P.; Hilliard, R. & Sawgan, R., Editorial Proceedings Working IEEE/IFIP Conference on Software Architecture (WICSA), **IEEE Computer Society**, 2011

78. (2011) Gu, Q.; Parkin, M. & Lago, P., A Taxonomy of Service Engineering Stakeholder Types, ServiceWave, **Springer**, 2011, 206-219

79. (2011) Andrikopoulos, V.; Parkin, M.; Papazoglou, M. & Lago, P., The S-Cube Knowledge Model -- Experiences in Integrating SSME Research Communities, Proceedings of International Conference on Knowledge Management Information Sharing (KMIS), **SiTe Press**, 2011, 201-210

80. (2011) Hashmi, S.; Clerc, V.; Razavian, M.; Manteli, C.; Tamburri, D.; Lago, P.; Nitto, E. & Richardson, I., Using the Cloud to Facilitate Global Software Development Challenges, Global Software Engineering Workshop (REMIDI), 2011 Sixth IEEE International Conference on, **IEEE Computer Society**, 2011, 70-77

81. (2011) Lago, P. & Jansen, T., Creating Environmental Awareness in Service Oriented Software Engineering, International Workshop on Services, Energy and Ecosystems (SEE 2010) at ICSOC, **Springer-Verlag**, 2011, 6568, 181-186

82. (2011) Razavian, M. & Lago, P., A Survey of SOA Migration in Industry, Proceedings of the International Conference on Service Oriented Computing, **Springer-Verlag**, 2011, 7084, 618-626

83. (2011) Tamburri, D. A. & Lago, P., Supporting Communication and Cooperation in Global Software Development with Agile Service Networks, in Crnkovic, I.; Gruhn, V. & Book, M. (ed.), Lecture Notes in Computer Science, European Conference in Software Architecture, **Springer-Verlag**, 2011, 6903, 236-243

84. (2011) Tamburri, D. A. & Lago, P., Satisfying Cloud Computing Requirements through Agile Service Networks, Proceedings of SERVICES 2011, **IEEE Computer Society**, 2011, 501-506

85. (2011) Clerc, V.; Lago, P. & van Vliet, H., Architectural Knowledge Management Practices in Agile Global Software Development, First Workshop on Architecting Global Software Development Systems (AGSE), **IEEE Computer Society**, 2011, 1-8

86. (2011) Avgeriou, P.; Lago, P. & Kruchten, P., Workshop on SHAring and Reusing architectural Knowledge: (SHARK 2011), in Taylor, R.; Gall, H. & Medvidovic, N. (ed.), Proceeding of the 33rd international conference on Software engineering (ICSE '11), **IEEE Computer Society**, 2011, 31, 1220-1221

87. (2010) Razavian, M. & Lago, P., in Yang, J.; Weske, M.; Maglio, P. & Fantinato, M. (ed.), Families of SOA Migration, International Conference on Service Oriented Computing (ICSOC), **Spring-Verlag**, 2010, 2

88. (2010) Gu, Q. & Lago, P., Service identification methods: a systematic literature review, in Di Nitto, E. & Yahyapour, R. (ed.), Towards a Service-Based Internet (ServiceWave), **Springer-Verlag**, Berlin / Heidelberg, 2010, 6481, 37-50

89. (2010) Razavian, M. & Lago, P., A Frame of Reference for SOA Migration, in Di Nitto, E. & Yahyapour, R. (ed.), Towards a Service-Based Internet (ServiceWave), **Springer-Verlag**, Berlin / Heidelberg, 2010, 6481, 150-162

90. (2010) Tamburri, D. A.; Lago, P. & Muccini, H. Leveraging Software Architectures through the ISO/IEC 42010 Standard: A Feasibility Study. In Proper, E. et al. (eds.), Trends in Enterprise Architecture Research (TEAR2010) Workshop, **Springer**, 2010, 70, 71-85

91. (2010) Lago, P.; Avgeriou, P. & Kruchten, P. Organizing a Software Architecture Body of Knowledge, SIGSOFT Softw. Eng. Notes, **ACM**, 2010, 35(5), 37-40

92. (2010) Gu, Q.; Lago, P. & van Vliet, H. A template for SOA design decision making in an educational setting, Proceedings 36th Euromicro Conference on Software Engineering and Advanced Application (SEAA), **IEEE Computer Society**, 2010, 175-182

93. (2010) Avgeriou, P.; Lago, P. & Kruchten, P. Fifth international workshop on sharing and reusing architectural knowledge (SHARK 2010), In di Penta, M.; Tarr, P. & di Nitto, E. (ed.), Proceedings of the 32nd ACM/IEEE International Conference on Software Engineering - Volume 2, **IEEE Computer Society**, 2010, 32, 437-438

94. (2010) Lago, P.; Jansen, T. & Jansen, M. The Service Greenery - Integrating Sustainability In Service Oriented Software, International Workshop on Software Research and Climate Change (WSRCC), co-located with ACM/IEEE ICSE, **IEEE Computer Society**, 2010, 1-2

95. (2010) Clerc, V.; de Vries, E. & Lago, P. Using Wikis to Support Architectural Knowledge Management in Global Software Development, SHARK, **ACM Press**, 2010, 7

96. (2010) Razavian, M.; Nguyen, D. K.; Lago, P. & van den Heuvel, W.-J. The SAPIENSA Approach for Service-enabling Pre-existing Enterprise Assets, International Workshop on SOA Migration and Evolution (SOAME), **OFFIS**, 2010, 10

97. (2009) Razavian, M. & Lago, P., Towards a Conceptual Framework for Legacy to SOA Migration. 5th International Workshop on Engineering Service Oriented Applications (WESOA) at ICSOC, **IEEE**, Nov. 2009

98. (2009) Gu, Q., Lago, P. On Service-Oriented Architectural Concerns and Viewpoints, Proceedings of the Working IEEE/IFIP Conference on Software Architecture, **IEEE Computer Society**, Sep. 2009, 4

99. (2009) Gu, Q.; Lago, P. & di Nitto, E., Guiding the Service Engineering Process: the Importance of Service Aspects

100. 2nd IFIP WG5.8 Workshop on Enterprise Interoperability (IWEI 2009), **Springer**, 2009, 14

101. (2009) Farenhorst, R.; Horn, J.; Lago, P. & van Vliet, H. The Lonesome Architect, Proceedings of the Working IEEE/IFIP Conference on Software Architecture, **IEEE Computer Society**, 2009, 10

102. (2009) de Boer, R.; Lago, P. & Telea, A. C. Ontology-Driven Visualization of Architectural Design Decisions Proceedings of the Working IEEE/IFIP Conference on Software Architecture, **IEEE Computer Society**, 2009, 10

103. (2009) Clerc, V.; Lago, P. & van Vliet, H. The Usefulness of Architectural Knowledge Management Practices in GSD International Conference on Global Software Engineering (ICGSE), **IEEE Computer Society**, 2009, 10 pages.

104. (2009) van den Heuvel, W.; Zimmermann, O.; Leymann, F.; Lago, P.; Schieferdecker, I.; Zdun, U. & Avgeriou, P. Software Service Engineering: Tenets and Challenges Principles of Engineering Service Oriented Systems (PESOS) at ICSE, **IEEE Computer Society**, 2009, 6 pages.

105. (2009) Lago, P.; Avgeriou, P. & Kruchten, Fourth international workshop on sharing and reusing architectural knowledge (SHARK 2009) ICSE Companion, P. Fickas, S.; Atlee, J. & Inverardi, P. (ed.), **IEEE Computer Society**, 2009, 2 pages.

106. (2009) Avgeriou, P.; Lago, P. & Kruchten, P., Towards Using Architectural Knowledge, Report of the Third ACM Workshop on SHAring and Reusing architectural Knowledge (SHARK), SIGSOFT Softw. Eng. Notes, ACM Press, Vol. 34(2):27-30, **ACM Press**, Mar. 2009.

107. (2009) Lago, P.; Schalken, J. & van Vliet, H., Designing a Multi-disciplinary Software Project Proceedings 22nd Conference on Software Engineering Education and Training (CSEE&T), Hyderabad, India, **IEEE Computer Society**, 2009, pages 77-84.

108. (2008) Lago, P., Muccini, H., Babar, M.A., Developing a Course on Designing Software in Global Software Development. Proc. of the 3rd IEEE International Conference on Global Software Engineering (ICGSE 2008), Bangalore, India, Aug. 17-20, **IEEE Computer Society**, 2008, 5 pages.

109. (2008) Avgeriou, P.; Lago, P. & Kruchten, P., in Schäfer, W.; Dwyer, M. B. & Gruhn, V. (ed.) Third international workshop on sharing and reusing architectural knowledge (SHARK 2008). ICSE Companion, **ACM Press**, 2008, pp. 1065-1066.

110. (2008) Gu, Q. & Lago, P., SOA Process Decisions: New Challenges in Architectural Knowledge Modeling. 3rd Workshop on SHAring and Reusing architectural Knowledge (SHARK), co-located with ICSE, **ACM Press**, Leipzig, Germany, May 2008, 8 pages.

111. (2008) Farenhorst, R., Izaks, R., Lago, P., van Vliet, H. A Just-In-Time Architectural Knowledge Sharing Portal. 7th Working IEEE/IFIP Conference on Software Architecture (WICSA), Vancouver, BC, Canada, **IEEE Computer Society**, Feb. 18-22, 2008.

112. (2008) Lago, P., Avgeriou, P., Capilla, R., Kruchten, P. Wishes and Boundaries for a Software Architecture Knowledge Community. 7th Working IEEE/IFIP Conference on Software Architecture (WICSA), Vancouver, Canada, BC, **IEEE Computer Society**, Feb. 2008, pages 4.

113. (2007) Avgeriou, P, Kruchten, P., Lago, P., Grisham, P., Perry, D., Architectural knowledge and rationale: issues, trends, challenges. Report of the Second ACM Workshop on SHAring and Reusing architectural Knowledge - Architecture, rationale and Design Intent (SHARK/ADI), ACM SIGSOFT Software Engineering Notes, Vol. 32(4), **ACM Press**, Jul. 2007, pp. 41-46.

114. (2007) R. Farenhorst, P. Lago, H. van Vliet, Effective Tool Support for Architectural Knowledge Sharing. European Conference on Software Architecture (ECSA), **Springer** LNCS, 2007, pages 16.

115. (2007) Gu, Q. & Lago, P., A stakeholder-driven service life cycle model for SOA, 2nd international workshop on Service oriented software engineering, **ACM**, 2007, 1-7

116. (2007) V. Clerc, P. Lago, H. van Vliet, Global Software Development: Are Architectural Rules the Answer?. **IEEE** International Conference on Global Software Engineering (ICGSE), 2007, pages 10.

117. (2007) Q. Gu, P. Lago, A Model for exploring the Service-oriented Software Engineering (SOSE) challenges. 2nd European Young Researchers Workshop on Service Oriented Computing (YRSOC), June 2007, pp.44-49.

118. (2007) R.C. de Boer, R. Farenhorst, P. Lago, H. van Vliet, V. Clerc, A. Jansen, Architectural Knowledge: getting to the Core. International Conference on Quality of Software-Architectures (QoSA), **Springer** LNCS, 2007, pages 18.

119. (2007) V. Clerc, P. Lago, H. van Vliet, The Architect's Mindset. International Conference on Quality of Software Architectures (QoSA), **Springer** LNCS, 2007, pages 18.

120. (2007) Avgeriou, P.; Kruchten, P.; Lago, P.; Grisham, P. & Perry, D. Sharing and Reusing Architectural Knowledge - Architecture, Rationale, and Design Intent, ICSE COMPANION '07: Companion to the proceedings of the 29th International Conference on Software Engineering, **IEEE Computer Society**, 2007, pp. 109-110.

121. (2007) Patricia Lago, Henry Muccini, Ljerka Beus-Dukic, Ivica Crnkovic, Sasikumar Punnekkat, Hans van Vliet. Towards a European Master Programme on Global Software Engineering. 20th Conference on Software Engineering Education & Training (CSEE&T), Dublin, Ireland, **IEEE Computer Society**, Jul. 2007.

122. (2007) Farenhorst, R., Lago, P., van Vliet, H. Prerequisites for Successful Architectural Knowledge Sharing. 18th Australian Conference on Software Engineering (ASWEC), Melbourne, Australia, Apr. 2007.

123. (2007) Clerc, V., Lago, P., van Vliet, H. Assessing a Multi-Site Development Organization for Architectural Compliance. 6th Working IEEE/IFIP Conference on Software Architecture (WICSA), Mumbai, India, **IEEE Computer Society**, Jan. 2007.

124. (2006). Lago, P., Avgeriou, P. 2006. First ACM Workshop on SHAring and Reusing architectural Knowledge (SHARK). **ACM** SIGSOFT Software Engineering Notes, Vol. 31(5), Sep. 2006, pp. 32-36.

125. (2006) Kruchten, P., Lago, P., van Vliet, H., Building up and Reasoning about Architectural Knowledge. 2nd International Conference on the Quality of Software Architectures (QoSA), Vaesteras, Sweden, **Springer** LNCS 4214, June 2006.

126. (2006) Farenhorst, R., de Boer, R.C., Deckers, R., Lago, P., van Vliet, H., What's in a Domain Model for Sharing Architectural Knowledge?. 18th International Conference on Software Engineering and Knowledge Engineering (SEKE), San Francisco Bay, USA, 2006.

127. (2006) Dingsøyr, T., Lago, P., van Vliet, H., Rationale Promotes Learning about Architectural Knowledge. 8th International Workshop on Learning Software Organizations (LSO), Rio de Janeiro, Brazil, Sep 2006.

128. (2006) de Boer, R.C., Farenhorst, R., van der Ven, J.S., Clerc, V., Deckers, R., Lago, P., van Vliet, H., Structuring Software Architecture Project Memories. 8th International Workshop on Learning Software Organizations (LSO), Rio de Janeiro, Brazil, Sep 2006.

129. (2005) Kruchten, P., Lago, P. van Vliet, H., Wolf, T. Building up and Exploiting Architectural Knowledge. Working IFIP/IEEE Conference on Software Architecture (WICSA), **IEEE Computer Society**, Nov 2005.

130. (2005) Lago, P. van Vliet, H. Explicit Assumptions enrich Architectural Models. 27th International Conference on Software Engineering (ICSE), **IEEE Computer Society**, May 2005, pp. 206-214.

131. (2005) Lago, P., van Vliet, H. Teaching a course in Software Architecture. 18th Conference on Software Engineering Education & Training (Eds. T.C. Lethbridge and D. Port), **IEEE Computer Society**, 2005, pp 35-42.

132. (2005) Fægri, T.E., Dingsøyr, T., Jaccheri, M.L., Lago, P., van Vliet, H. Study Proposal: Effects of Brokering between Communities of Practice in Product Family Organizations. Learning Software Organizations (LSO) Workshop, Kaiserslautern, Germany, 2005.

133. (2005) Fægri, T.E., Decker, B., Dingsøyr, T., Jaccheri, M.L., Lago, P., Muthig, D., van Vliet, H. Exploring Communities of Practice for Product Family Engineering. Proceedings of WM 2005, Lecture Notes in Artificial Intelligence 3782, (K.-D. Althoff, Ed.),Kaiserslautern, Germany: **Springer-Verlag**, 2005, pp. 96-105.

134. (2004). Lago, P., van Vliet, H. Observations from the Recovery of a Software Product Family. The Third Software Product Line Conference (SPLC). Aug.-Sep., 2004

135. (2004). Lago, P., Niemelä, E., van Vliet, H. Tool Support for Traceable Product Evolution. European Conference on Software Maintenance and Reengineering (CSMR). March, 2004.

136. (2004). Capiluppi, A., Morisio, M., Lago, P. Evolution of understandability in OSS projects. European Conference on Software Maintenance and Reengineering (CSMR), March, 2004.

137. (2003). Capiluppi, A., Lago, P., Morisio, M. Evidences in the evolution of OS projects through Change log Analyses. 3rd IEEE Workshop on Open Source Software Engineering, May, 2003.

138. (2003). Capiluppi, A., Lago, P., Morisio, M., How the Open Source projects evolve? First drafts of models analyzing change logs. International Conference on eXtreme Programming and Agile Processes in Software Engineering, May, 2003.

139. (2003). Falcarin, P., Lago, P., Morisio, M. Dynamic architectural changes for distributed services. International ACM Workshop on Component-Oriented Programming, June, 2003.

140. (2002). Capiluppi, A., Lago, P., Morisio, M. Characterizing the OSS Process. In Proc. of the 2nd Workshop on Open Source Software Engineering, ICSE 2002, Orlando, FL, May 2002. On-line at http://opensource.ucc.ie/icse2002/

141. (2003) Capiluppi, A., Lago, P., Morisio, M. Characteristics of Open Source Projects. 7th European Conference on Software Maintenance and Reengineering (CSMR), March 2003.

142. (2002) P. Lago, M. Matinlassi, The WISE Approach to Architect Wireless Services, in Product Focused Software Process Improvement, LNCS 2552, **Springer-Verlag**, 367-382

143. (2002) P. Lago, A policy-based approach to personalization of communication over converged networks, in Third International Workshop on Policies for Distributed Systems and Networks, **IEEE Computer Society**, 169-180, 2002.

144. (2001). P. Lago, P. Falcarin. UML Requirements for Distributed Software Architectures. In Proc. of the 1st International Workshop on Describing Software Architecture with UML, (co-located with ICSE'2001), **IEEE Computer Society**, Toronto, Canada, May, 2001.