

# CURRICULUM VITAE

## Pasqualina Potena

Research fellow (Assegnista di ricerca)

Università degli Studi di Bergamo

Dipartimento dell'Ingegneria dell'Informazione e Metodi Matematici

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### EDUCATION

- Date
- Name of organization providing education
- Title of qualification awarded
- Title of thesis
- Advisor
  
- Date
- Name of organization providing education
- Title of qualification awarded
- Title of thesis
- Supervisor

#### April 2008

Dipartimento di Scienze dell'Università degli Studi "G. D'Annunzio" Chieti e Pescara

Ph.D. degree in Science

Decision Supporting Models for Component-Based and Service-Oriented Software Development

prof. Vittorio Cortellessa (Dipartimento di Informatica, Università degli Studi dell'Aquila) e prof.ssa Chiara Meo (Dipartimento di Scienze dell'Università degli Studi "G. D'Annunzio" Chieti e Pescara).

#### October 2003

Università degli Studi di L'Aquila

Laurea Degree in Computer Science (Laurea in informatica –vecchio ordinamento)

Un modello di ottimizzazione di costo e affidabilità di software basato su componenti  
prof. Vittorio Cortellessa

### WORKING EXPERIENCES

- Date
- Name of employer
- Occupation
  
- Date
- Name of employer
- Occupation
  
- Date
- Name of employer
- Occupation

#### April 2010-September 2010

Università degli Studi di L'Aquila

Scholarship (Borsa di Studio) on

"Modellazione ed Analisi di Qualità di un Dynamic Positioning System (DPS)"

#### February 2009- March 2010

Politecnico di Milano

Research fellowship (assegno di ricerca) on the  
"Analysis of self-managing dependable systems"

#### January 2007-December 2008

Università degli Studi di L'Aquila

Research fellowship (assegno di ricerca) on the  
"Analisi e Validazione di Architetture Software"

- Data
- Name of employer
- Occupation

**2006**

Università degli Studi di L'Aquila

Collaboration contract for the "Analysis of ORACLE CRM finalized to the evaluation of the impact of CRM systems provided in ASP mode for SME"

### **SEMINARIES**

- Data 7 December 2006
- Location Mälardalen University, Department of Computer Science and Electronics, Västerås, Sweden
- Title Composition of non-functional attributes in software systems
- Data 28 February 2005
- Location Università dell'Aquila-Corso di Ingegneria del Software II
- Title Automated support for "make-or-buy" decisions in component based software systems

### **LONG-TERM EXPERIENCES IN FOREIGN STATES**

- Date

**November 2006 - December 2007**

PhD visiting scholar at Mälardalen University, Mälardalen Real-Time Research Centre and PROGRESS Strategic Research Center (Västerås, Sweden).

She worked under the supervision of the prof. Ivica Crnkovic that is the director of the research group. The research topics were in the area of search-based software engineering, with particular emphasis on optimization models for selection of software components based on non-functional properties

**PARTICIPATION TO  
SCHOOLS/COURSES/  
CONFERENCES**

**Conferences**

*12th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNACS 2010)- Workshop on Software Services: Frameworks and Platforms*, Timisoara, Romania, September 2010.

*14th European Conference on Software Maintenance and Reengineering (CSMR 2010)*, Madrid, Spain, March, 15-18, March 2010.

*1st International Symposium on Search Based Software Engineering (SSBSE 2009)*, May, 13<sup>th</sup>-15<sup>th</sup>, Cumberland Lodge, Windsor, UK, 2009.

*European Software Engineering Conference (ESEC) and the ACM SIGSOFT symposium on Foundations of Software Engineering (FSE)*, Cavtat near Dubrovnik, Croatia, September 03 - 07, 2007.

*3rd European Workshop on Software Architecture (EWSA 2006)*, 4 e 5 Settembre, Nantes, Francia, 2006.

**Schools and Courses**

2<sup>nd</sup> International School on Software Engineering Università di Salerno, from September 13-th to September 16-th, 2005

May 2007 - She has participated and successfully completed the postgraduate course Advanced Topics in Component-Based Software Engineering. The course is part of postgraduate program in Computer Science and Software engineering held on Mälardalen University, Västerås, Sweden. The course has been held by the prof. Ivica Crnkovic.

She attended the "Protocolli Internet" and "Ingegneria del Web I: Web Agents" courses that have been organized for the Master in Web Technology 2004/2005, Facoltà di Scienze MM.FF.NN., University of L'Aquila.

## OTHER SCIENTIFIC ACTIVITIES

### Program Committee

SSBSE 2013 - 5th International Symposium on Search Based Software Engineering  
August 24-26, 2013, St. Petersburg, Russia. <http://ssbse.org/2013/>.

ICSEA 2013 - 8th International Conference on Software Engineering Advances  
October 27 - November 1, 2013 - Venice, Italy.

SERVICE COMPUTATION 2013 - Fifth International Conferences on Advanced Service  
Computing. May 27 - June 1, 2013 - Valencia, Spain.

SA -TTA 2013 - Software Architecture: Theory, Technology, and Applications (SA-TTA 2013)  
track at the 28th ACM Symposium on Applied Computing (SAC). March 18 – 22, 2013 -  
Coimbra, Portugal.

SSBSE 2012 - 4th International Symposium on Search Based Software Engineering  
September 28 - 30, 2012 - Riva del Garda, Trento, Italy. <http://www.ssbse.org/2012>.

ICSEA 2012 - 7th International Conference on Software Engineering Advances  
November 18-23, 2012 - Lisbon, Portugal.

### Reviewer

Journal of Systems and Software (Elsevier)  
(<http://www.journals.elsevier.com/journal-of-systems-and-software/>)

*Information and Software Technology* (Elsevier) Journal.  
(<http://www.journals.elsevier.com/information-and-software-technology/>)

IET Software  
<http://digital-library.theiet.org/content/journals/iet-sen>

### External co-reviewer for the following events:

- 2<sup>nd</sup> International Conference on Cloud Computing and Services Science (CLOSER 2012) April 18-21, 2012, Porto, Portugal.
- Fifth IEEE International Conference on Software Testing, Verification and Validation (ICST 2012) April 17-21, 2012, Montréal, Canada.
- 7th IEEE International Conference on Web Services (ICWS 2009) July 6-10, 2009, USA
- 31st International Conference on Software Engineering (ICSE 2009), Vancouver, Canada, May 16-24, 2009
- Fundamental Approaches to Software Engineering (FASE 2008) at ETAPS 2008 Budapest (Hungary), 29 March - 6 April, 2008
- 22<sup>nd</sup> IEEE/ACM International Conference on Automated Software Engineering (ASE) 2007
- Software Composition workshop (ETAPS 2007), March 24 - April 1, 2007, Braga (Portugal).
- International Workshop on Reliability in Decentralized Distributed systems (RDDS 2006), Montpellier, France, Oct 30, 2006
- The 21st IEEE International Conference on Automated Software Engineering (ASE 2006), Tokyo, JAPAN, September 18-22, 2006.
- Journal of Software Maintenance and Evolution: Research and Practice, incorporating Software Process: Improvement and Practice

## RESEARCH TOPICS

Software Engineering  
Non functional-aspects  
Architecture-based solutions for Self-adapting/Evolving software systems  
Optimization models

## PUBLICATIONS

### *Journals*

Mirandola R., Potena P., Scandurra, P.: "Adaptation Space Exploration for Service-oriented Applications". *Science of Computer Programming (Elsevier)*. *Accepted for publication*.

Potena, P.: "Optimization of adaptation plans for a service-oriented architecture with cost, reliability, availability and performance tradeoff", *Journal of Systems and Software*, Vol. 86, Issue 3, March 2013, pp. 624-648, ISSN 0164-1212, DOI: 10.1016/j.jss.2012.10.929.

Mirandola R., Potena, P.: "A QoS-based framework for the adaptation of service-based systems", *Journal of Scalable Computing: Practice and Experience, Scientific International Journal for Parallel and Distributed Computing*, Vol. 12, Num. 1, pp. 63-78, ISSN 1895-1767, 2011.

Cortellessa, V., Crnkovic, I., Marinelli, F., Potena, P.: "Experimenting the Automated Selection of COTS Components Based on Cost and System Requirements", *Journal of Universal Computer Science*, vol. 14, no. 8 (2008), pp. 1228-1255. DOI:10.3217/jucs-014-08-1228.

Cortellessa, V., Marinelli, F., Potena, P.: "An optimization framework for "build-or-buy" decisions in software architecture", *Computers and Operations Research, Elsevier Science*, Vol. 35, Issue 10, October 2008, pp. 3090-3106. ISSN 0305-0548. DOI: 10.1016/j.cor.2007.01.011.

### *Conferences*

Cortellessa, V., Marinelli, F., Mirandola, R., Potena, P.: "Quantifying the influence of failure repair/mitigation costs on Service based Systems", 24th IEEE International Symposium on Software Reliability Engineering (ISSRE 2013), Pasadena, CA, USA. *Accepted for publication*.

Riccobene E., Potena P., Scandurra P.: "Reliability prediction for Service Component Architectures with the SCA-ASM component model". *Proc. of the 38th Euromicro Conference on Software Engineering and Advanced Applications (EUROMICRO-SEAA 2012)*, IEEE, pp. 125-132, ISBN: 978-1-4673-2451-9, DOI: 10.1109/SEAA.2012.53, Cesme, Izmir, Turkey.

Mirandola R., Potena P., Scandurra P.: "A Reliability Prediction Method for Abstract State Machines". *Proc. of the 3rd International ABZ 2012 Conference Abstract State Machines (ASM)*, Alloy, B, VDM, Z, Springer, LNCS, pp. 336-340, ISBN: 978-3-642-30884-0.

Scandurra P., Raibulet, C., Potena P., Mirandola R., Capilla R.: "Adapting cloud-based applications through a coordinated and optimized resource allocation approach". *Proc. of the 2nd International Conference on Cloud Computing and Services Science (CLOSER 2012)*, pp. 355-364, ISBN: 978-989-8565-05-1, Porto, Portugal.

Scandurra P., Raibulet, C., Potena P., Mirandola R., Capilla R.: "A layered coordination framework for optimizing resource allocation in adapting cloud-based applications", *Proc. of the 27th Symposium On Applied Computing (SAC 2012)*, ACM, pp. 471-472, ISBN: 978-1-4503-0857-1.

Mirandola R., Potena P., Scandurra P.: "An Optimization Process for Adaptation Space Exploration of Service-oriented Applications", *Proc. of the 6th IEEE International Symposium on Service-Oriented System Engineering (SOSE 2011)*, pp. 146-151, ISBN: 978-1-4673-0411-5, DOI: 10.1109/SOSE.2011.6139103,

Irvine, CA, USA.

Mirandola, R., Potena, P., Riccobene, E., Scandurra, P.: "A Framework for Adapting Service-oriented Applications based on Functional/Extra-functional Requirements Tradeoffs", *Proc. of the Sixth International Conference on Software Engineering Advances*, pp. 118-123, ISBN: 978-1-61208-165-6, Barcelona, Spain, 2011.

Lulli, G., Mirandola, R., Potena, P., Raibulet C.: "Resource Management in the Air Traffic Domain", *Proc. of the 5th European Conference on Software Architecture, ECSA 2011*, Springer, LNCS, Vol. 6903/2011, pp. 97-104, ISBN: 978-3-642-23797-3, DOI: 10.1007/978-3-642-23798-0\_10 Essen, Germany, 2011.

Lulli G., Potena, P, Raibulet C.: "Resource Allocation, Trading and Adaptation in Self-Managing Systems", *CAISE2011 International Workshops Proceedings, Advanced Information Systems Engineering Workshops*, Springer, LNBIP, Camille Salinesi & Oscar Pastor (Eds.), Vol. 83, Part 6, pp. 385-396, ISBN: 978-3-642-22055-5, DOI: 10.1007/978-3-642-22056-2\_41, London, UK, 2011.

Mirandola R., Potena, P.: "Self-adaptation of service based systems based on cost/quality attributes tradeoffs". *Proc. of the 12th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNACS 2010)*. IEEE Computer Society, pp. 493-501, ISBN: 978-0-7695-4324-6, Timisoara, Romania, 2010.

Cortellessa, V., Mirandola, R., Potena, P.: "Selecting Optimal Maintenance Plans based on Cost/Reliability Tradeoffs for Software Subject to Structural and Behavioral Changes". *Proc. of the 14th European Conference on Software Maintenance and Reengineering (CSMR 2010)*, IEEE, pp. 21-30, Print ISBN: 978-1-61284-369-8, DOI= 10.1109/CSMR.2010.15, Madrid, Spain, 2010.

Cortellessa, V., Potena, P.: "How can optimization models support the maintenance of component-based software?", *Proc. of 1st International Symposium on Search Based Software Engineering (SSBSE 2009)*, IEEE, pp.97-100, ISBN: 978-0-7695-3675-0, DOI=10.1109/SSBSE.2009.22, Cumberland Lodge, Windsor, UK, 2009.

Cortellessa, V., Crnkovic, I., Marinelli, F., Potena, P.: "Driving the Selection of COTS Components on the Basis of System Requirements", *Proc. of 22nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2007)*, ACM, pp. 413-416, ISBN: 978-1-59593-882-4, DOI=10.1145/1321631.1321697, Atlanta, Georgia, USA, November 5-9, 2007.

Potena P.: "Composition and tradeoff of non-functional attributes in software systems: research directions" (doctoral symposium), *Proc. of the 6th joint meeting of the European Software Engineering Conference (ESEC) and the ACM SIGSOFT symposium on Foundations of Software Engineering (FSE), Companion Papers*. ESEC-FSE companion '07, ACM, pp. 583 – 586, ISBN: 978-1-59593-811-4, DOI=10.1145/1287624.1287716, Cavtat near Dubrovnik, Croatia, September 03 - 07, 2007.

Cortellessa, V., Potena, P.: "Path-Based Error Propagation Analysis in Composition of Software Services", *Proc. of the 6th International Symposium, Software Composition 2007 (ETAPS 2007)*, Lecture Notes In Computer Science. Springer-Verlag, Berlin, Heidelberg, Vol. 4829/2007, pp. 97-112, ISSN 0302-9743, DOI: 10.1007/978-3-540-77351-1\_8, Braga (Portugal), March 24 - April 1, 2007.

Cortellessa, V., Marinelli, F., Potena, P.: "Automated Selection of Software Components Based on Cost/Reliability Tradeoff", *Proc. of 3rd European Workshop on Software Architecture (EWSA 2006)*, Lecture Notes in Computer Science, Springer Berlin / Heidelberg, Vol. 4344, pp. 66-81, ISSN 0302-9743, DOI: 10.1007/11966104\_6 Nantes, France, September, 2006.

### **Technical Report**

Mirandola, R., Potena, P., Scandurra, P.: "An Optimization Process for Adaptation Space Exploration of Service-oriented Applications: the Stock Trading System case study". Department of Information Technology and Mathematical Methods, Working Paper Series "Information Technology" n. 3/IT – 2011.

Mirandola, R., Potena, P., Scandurra, P., Riccobene, E.: "A framework for adapting service-oriented applications based on functional/extra-functional requirements tradeoffs: the Stock Trading System case study". Department of Information Technology and Mathematical Methods, Working Paper Series "Information Technology" n. 2/IT – 2011.

### **TEACHING**

She had 12 hours teaching assistant (Tutorato – docenza come esercitatore -) for the course "Informatica (Database module)". Università degli Studi di Bergamo.  
Lecturer: Prof. Giuseppe Psaila. (Marzo-Giugno 2012)

She had 50 hours teaching for the course "Database Design" that has been organised in the framework of the regional course "Specialista Sviluppo Applicazioni Web". I.T.I.S. "Alessandro Volta", Tivoli (Roma), Italy. (June 2006)

She had 66 hours teaching for the "Database Design and SQL" course that has been organised in the framework of the regional course "Scuola e futuro: esperti di applicazioni WEB".  
Liceo Scientifico Statale "L.Spallanzani", Tivoli (Roma), Italy.  
(September-October 2005)