curriculum vitae

PERSONAL INFORMATION

Surname	**Roda**
Name	**Irene**
Birth date	**25/11/1987**
Address	**Via Lecco 5, 20124, Milano (Italy)**

Current Position

• Date (from – to)	February 2016 -
• Name and address of firm/university	Politecnico di Milano – DIG (Management, Economics and Industrial Engineering Department)
• Type of business or sector	Industrial Engineering
• Type of employment	**Post-doc research fellow**

• Date (from – to)	November 2012 – February 2016
• Name and address of firm/university	Politecnico di Milano – DIG (Management, Economics and Industrial Engineering Department)
• Type of business or sector	Industrial Engineering
• Type of employment	**Ph.D in Management Engineering,** *cum laude*
• PhD thesis	The role of Total Cost of Ownership within the Asset Management framework

• Date (from – to)	July 2014 -
• Name and address of firm/university	Politecnico di Milano – DIG (Management, Economics and Industrial Engineering Department)
• Type of business or sector	Industrial Engineering
• Type of employment	**Co-Director of the Observatory on Technologies and Service for Maintenance(Osservatorio Tecnologie e Servizi per la Manutenzione)**, Politecnico di Milano, DIG (TeSeM, www.tesem.net)

Education and training

• Date (from – to)	September 2009 - April 2012
• Title of qualification awarded	**MSc in Industrial Engineer**
• Name and type of organisation	Politecnico di Milano Milano (Italy)
Duration of the course of study	Two years
• Principal subjects	**Specialization: Manufacturing & Management** Dissertation/thesis subject: Maintenance Engineering/ Spare parts management
Mark obtained	110 / 110

• Date (from – to)	September 2006 - July 2009
• Title of qualification awarded	**Bachelor in Management Engineering**
• Name and type of organisation	Alma Mater Studiorum Università di Bologna (Engineering Faculty) Bologna (Italy)
Duration of the course of study	Three years
• Principal subjects	Dissertation/thesis subject: Logistics and Accounting Control (ABC costing

	project development in a mechanical company)
Mark obtained	110 / 110 magna cum laude

• Date (from – to)	2001 – 2006
• Title of qualification awarded	**Scientific high school**
• Name and type of organisation	Liceo Scientifico Augusto Righi Bologna (Italy)
Duration of the course of study	Five years
• Principal subjects	Scientific High school: specialization in Physics and Informatics
Mark obtained	100 / 100 cum laude

Work experience, stages, studies abroad

• Date (from – to)	2012 –
• Type of employment	**Collaborations in projects funded by private companies (VERSALIS, CAVANNA, FERRERO, RFI, PHILIP MORRIS)**
• Name and address of firm/university	Politecnico di Milano – DIG (Management, Economics and Industrial Engineering Department)

• Date (from – to)	November 2014 – March 2015
• Title of qualification awarded	**Visiting Phd Student**
• Name and type of organisation	University of Cambridge, Institute for Manufacturing, Engineering Department Cambridge, UK

• Date (from – to)	January 2013 – March 2013
• Title of qualification awarded	**Visiting Phd Student & consultant**
• Name and type of organisation	Pontificia Universidad Catolica de Valparaiso in Chile & C.G.S (http://www.cgssa.com/en) , Santiago, Chile
• Principal subjects/occupational skills covered	Phd abroad period, experimental case studies in the mining industry for Asset Operational Availability analysis and Total Cost of Ownership evaluation. Strong collaboration in consultancy projects at C.G.S.

• Date (from – to)	January 2015 – June 2018
• Title of qualification awarded	**Visiting researcher** (total: 6 months)
• Name and type of organisation	Pontificia Universidad Catolica de Valparaiso in Chile
• Principal subjects/occupational skills covered	**Marie Curie Action for International Research Staff Exchange Scheme 2015 –H2020-MSCA-RISE-2014** Action acronym: Sustain-Owner, Action full title: "Sustainable Design and Management of Industrial Assets through Total Value and Cost of Ownership", Grant agreement no: 645733

• Date (from – to)	01/06/2012 -
• Type of employment	**Research Fellow**
• Name and address of firm/university	Politecnico di Milano – DIG (Management, Economics and Industrial Engineering Department)
• Main activities and responsibilities	**Research fellow in DIG within the EU funded projects:** • **Maya** (H2020-FoF-2015) • **eSONIA** (Artemis Joint Undertaking), • **iMaPla** (Marie Curie Action for International Research Staff Exchange Scheme), • **E-SCOP** (Artemis Joint Undertaking '13), **Research fellow in DIG within the Regione Lombardia funded project:** • **AD-COM – (Ongoing)**

• Date (from – to)	20th August 2011 – 31st October 2011
• Title of qualification awarded	**Visiting Msc Student**
• Name and type of organisation	Universidad Tecnica Federico Santa Maria Valparaiso (Chile)
Duration of the course of study	Two months and a half
• Principal subjects/occupational skills covered	Development of part of the McS Thesis in the University Industrial Engineering Department (on field survey development in the mining sector)

• Date (from – to)	August 2010 – February 2011
• Title of qualification awarded	**Erasmus Program**
• Name and type of organisation	DTU - Danmarks Tekniske Universitet (Technical University of Denmark) Copenhagen (Denmark)
Duration of the course of study	Six months
• Principal subjects/occupational skills covered	Attended courses: - Technology, Economics, Management and Organisation - Introduction to Planning - Strategic Management - Financial Products - Optimization in Finance

• Date (from – to)	12th March 2010 – 20th March 2010
• Title of qualification awarded	**Athens Programme**, Intensive course Abroad
• Name and type of organisation	UPM - Universidad Politécnica de Madrid Madrid (Spain)
• Principal subjects/occupational skills covered	"PROJECT MANAGEMENT: ART AND SCIENCE". Attendance of lectures and continuous evaluation by project activities, practical exercises and in-class participation

• Date (from – to)	02/02/2009 - 27/06/2009
• Type of employment	**Stageur in Logistics and cost controlling**
• Name and address of firm/university	G.D SpA (Coesia Group) Via Battindarno 91, 40100 Bologna (Italy)
• Type of business or sector	Word leader company in designing and manufacturing cigarettes' making&packing lines.
• Main activities and responsibilities	Internship in a Manufacturing Company. Field: Logistics and Costs Control. Implementation of an Activity Based Costing System used to allocate the Logistics costs properly to the Business Units of the company.

publications and articles submitted

2012
- M. Macchi, I. Roda, L. Fumagalli, F. Beretta, S. Saba (2012). Aligning classification and inventory control of spare parts in the frame of an integrated management process. (pp. 1- 6). *In: XVII Summer School "F. Turco" Breaking down the barriers between research and industry.* 12/9/2012-14/9/2012, Venice.
- Roda I., Macchi M., Fumagalli L., Viveros P., On the classification of spare parts with a multi-criteria perspective, *Proceedings of 2nd IFAC Workshop, A-MEST'12, Advanced Maintenance Engineering, Services and Technology*, Sevilla, Spain, 21-23 Nov 2012, pp. 19-24

2013
- I. Roda, M. Garetti, A.A. Andreani, E. Heidke, Model-based evaluation of Asset Operational Availability (2013). In: XVIII Summer School "F. Turco". 11/9/2012-13/9/2012, Senigallia

2014
- Roda, I., Macchi, M., Fumagalli, L., & Viveros, P. (2014). A review of multi-criteria classification of spare parts: From literature analysis to industrial evidences. ***Journal of Manufacturing Technology Management***, 25(4),

528-549.

- Roda, I; Garetti, M., The link between costs and performances for total cost of ownership evaluation of physical asset: State of the art review," Engineering, Technology and Innovation (ICE), 2014 International ICE Conference on , vol., no., pp.1,8, 23-25 June 2014, doi: 10.1109/ICE.2014.6871544
- Roda, I; Garetti, M. (2014).TCO evaluation in physical asset management : benefits and limitations for industrial adoption, Proceedings of: APMS 2014, Part III, IFIP AICT 440, pp. 216–223.
- Miranda S., Roda I., Macchi M., Montera G. (2014),A criticality-driven methodology for the selection of spare parts stock management policies: the case of a beverage industry company; XIX Summer School "F. Turco" SEPTEMBER 09-12, 2014, Senigallia.
- Bush A., Roda I., Understanding Living Labs in Innovation Management, Proceedings of: 1st EDIM ANNUAL PhD CONFERENCE: Research Challenges in Contemporary Management Engineering, 11-12 June 2014.

2015

- Roda, I., and Garetti M.. "Application of a Performance-driven Total Cost of Ownership (TCO) Evaluation Model for Physical Asset Management." In 9th WCEAM Research Papers, pp. 11-23. Springer International Publishing, 2015.
- Fumagalli L., Roda I., Scotton L., Macchi, M., Refosco G. (2015). Experimental comparison of spare parts inventory models through simulation: the case of a railway line. XX Summer School "F. Turco" September, 2015, Napoli

2016

- Roda I., Parlikad A., Macchi M., Garetti M. 2015. A Framework for implementing value-based approach in Asset Management, Proceedings of the 10th World Congress on Engineering Asset Management (WCEAM 2015). Part of the series Lecture Notes in Mechanical Engineering pp 487-495.
- Roda I., Macchi M., Studying the funding principles for integrating Asset Management in Operations: an empirical research in production companies. Submitted and Accepted for Proceedings of 3rd IFAC Workshop, A-MEST'16, Advanced Maintenance Engineering, Services and Technology, Biarritz, France, October 2016
- Napoleone A., Roda I., Macchi M., The implications of condition monitoring on asset-related decision-making in the Italian power distribution sector. Proceedings of 3rd IFAC Workshop, A-MEST'16, Advanced Maintenance Engineering, Services and Technology, Biarritz, France, October 2016
- Duran O., Macchi M., Roda I., On the relationship of spare parts inventory policies with Total Cost of Ownership of industrial assets. Proceedings of 3rd IFAC Workshop, A-MEST'16, Advanced Maintenance Engineering, Services and Technology, Biarritz, France, October 2016.
- Duran O., Macchi M., Roda I., Linking the Spare Parts Management with the Total Ownership Costs: An Agenda for Future Research. Book of Proceedings, International Joint Conference - CIO-ICIEOM-IIE-AIM (IJC 2016), Donostia - San Sebastian (Spain), 13th – 15th July 2016.
- Duran, Orlando; Roda, Irene; Macchi, Marco. Linking the spare parts management with the total costs of ownership: An agenda for future research. *Journal of Industrial Engineering and Management,* [S.l.], v. 9, n. 5, p. 991-1002, dec. 2016. ISSN 2013-0953, doi:http://dx.doi.org/10.3926/jiem.2083.
- Roda I., Albanese S., Macchi M., Il Total Cost of Ownership di un Asset industriale complesso. L'analisi delle Performance tecniche nel caso di Versalis S.p.A., Rivista di Manutenzione Tecnica e Management, Nov. 2016

2017

- Parmigiani C., Roda I., Arata, A.A. (2017), Approccio sistemico all'ingegneria di affidabilità. Per una pianificazione congiunta di manutenzione e produzione, Rivista di Manutenzione Tecnica e Management, Marzo 2017.
- Section 2.11 Tutorial 11 – Total Cost of ownership evaluation in the European Rubber Company, in Asset Lifecycle Maagement: Tutorials and Case-studies Marco Garetti, Franco Angeli ed.
- Roda, I., M. Macchi, C. Parmigiani, and A. A. Arata. "System-Oriented Reliability-Based Methodology for Optimal Joint Maintenance and Production Planning." In IFIP International Conference on Advances in Production Management Systems, pp. 92-100. Springer, Cham, 2017.
- Fumagalli, L., Macchi, M., Roda, I. and Giacomin, A., 2017, September. Cross-Correlation Method for Orchestration of Preventive Maintenance Interventions. In IFIP International Conference on Advances in Production Management Systems (pp. 84-91). Springer, Cham.
- Macchi, M., Roda, I. and Fumagalli, L., 2017, September. On the Advancement of Maintenance Management Towards Smart Maintenance in Manufacturing. In IFIP International Conference on Advances in Production Management Systems (pp. 383-390). Springer, Cham.

2018

- Roda I., Macchi M., A framework to embed Asset Management in production companies, Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability Volume 232 Issue 4, August 2018.
- Macchi, Roda, Negri, Fumagalli, Exploring the role of Digital Twin for Asset Lifecycle Management, In Proceedings: INCOM 16th IFAC Symposium on Information Control Problems in Manufacturing, 11-13 June 2018 Bergamo Italy
- F. J. Tapia-Ubeda, P. Miranda, I. Roda, M. Macchi, O. Durán, An Inventory-Location Modeling Structure for Spare Parts Supply Chain Network Design Problems in Industrial End-User Sites, In Proceedings: INCOM 16th IFAC Symposium on Information Control Problems in Manufacturing, 11-13 June 2018 Bergamo Italy
- A. Polenghi, L. Fumagalli, I. Roda, Literature review about roles of simulation in industrial engineering, In Proceedings: INCOM 16th IFAC Symposium on Information Control Problems in Manufacturing, 11-13 June 2018 Bergamo Italy
- Macchi M., Roda I., Toffoli L. (2018) Remaining Useful Life Estimation for Informed End of Life Management of Industrial Assets: A Conceptual Model. In: Moon I., Lee G., Park J., Kiritsis D., von Cieminski G. (eds) Advances in Production Management Systems. Smart Manufacturing for Industry 4.0. APMS 2018. IFIP Advances in Information and Communication Technology, vol 536. Springer, Cham
- Roda I., Macchi M., Fumagalli L. (2018) The Future of Maintenance Within Industry 4.0: An Empirical Research in Manufacturing. In: Moon I., Lee G., Park J., Kiritsis D., von Cieminski G. (eds) Advances in Production Management Systems. Smart Manufacturing for Industry 4.0. APMS 2018. IFIP Advances in Information and Communication Technology, vol 536. Springer, Cham

MSc thesis

Title		An integrated decision framework for spare parts classification and inventory control policy selection: conceptualization, development and validation in industrial contexts
Language		English
University		Politecnico di Milano
Supervisor		Marco Macchi
Discussion		April 2012

PhD thesis

Title		The role of Total Cost of Ownership within the Asset Management Framework
Language		English
University		Politecnico di Milano
Supervisor		Marco Garetti
Discussion		February 2016

Prizes

Prizes	**Philip Morris Italia Empowering Research Award 2015** – 10 months project Project: P-Manu: predictive maintenance for high speed automated machines

Training and Teaching

Training	- Associazione Formatori Ingegneri Pordenone - Intervento/docenza "Si fa presto a dire manutenzione" – January 2018 - UNARETI / A2A - (MIP Business School) – Formazione Asset Management e Ingegneria di Manutenzione - RFI (Rete Ferroviaria Italiana) – (MIP Business School)- Corso Asset Management - AIA - AGRICOLA ITALIANA ALIMENTARE – (MIP Business School) - Progetto Formazione Responsabili di Manutenzione - Docenza PERCORSO EXECUTIVE IN SMART MANUFACTURING 2017– MIP Business School – 8h – Verso l'eccellenza degli asset produttivi - Docenza PERCORSO EXECUTIVE IN SMART MANUFACTURING 2018– MIP Business School – 8h – Maintenance 4.0 - Progetto Formativo Industry 4.0 - preparati al futuro, Confindustria Italia (Vicenza e Vibo Valentia) (MIP Business School)
Teaching	**A.Y. 2017/2018**

- Professor and course co-director: **INTERGRATED OPERATIONS & SUPPLY CHAIN PLANNING**, International Master in Industrial Management, Edition 14, 2018-2020, MIP Politecnico di Milano, Graduate School of Business.
- Teaching assistant in MSc course: **ASSET LIFE CYCLE MANAGEMENT**, Politecnico di Milano (Bovisa, Industrial Engineering), Language: English
- Professor: Module: "Gestione strategica del ciclo di vita degli asset" – **Strategic Asset Lifecycle Management** (10 h) – Executive Master in "Gestione degli Asset Industriali e della Manutenzione" (Industrial asset and maintenance management" - MIP Politecnico di Milano and School of Management Università degli Studi di Bergamo.
- Tutor in the MSc course in "**INDUSTRIAL TECHNOLOGIES**", Politecnico di Milano

A.Y. 2016/2017:
- Teaching assistant in MSc course: **ASSET LIFE CYCLE MANAGEMENT**, Politecnico di Milano (Bovisa, Industrial Engineering), Language: English
- Tutor in the MSc course in "**ASSET LIFE CYCLE MANAGEMENT**", Politecnico di Milano(BV)
- Professor in: **INTERGRATED OPERATIONS & SUPPLY CHAIN PLANNING**, International Master in Industrial Management, Edition 13, 2016-2018, MIP Politecnico di Milano, Graduate School of Business.

A.Y. 2015/2016:
- Teaching assistant in MSc course: **ASSET LIFE CYCLE MANAGEMENT**, Politecnico di Milano (Industrial Engineer), Language: English
- Tutor in the MSc course in "**ASSET LIFE CYCLE MANAGEMENT**", Politecnico di Milano(BV)
- Teaching assistant in MSc course: **DESIGN AND MANAGEMENT OF PRODUCTION SYSTEMS**, Politecnico di Milano Mech Engineer), Language: English
- Tutor in the MSc course in **DESIGN AND MANAGEMENT OF PRODUCTION SYSTEM**, Politecnico di Milano(BV)
- Teaching assistant in BA course: **IMPIANTI INDUSTRIALI E GESTIONE DELLA PRODUZIONE** (Leonardo, Ing. dell'Automazione), Language: Italian

A.Y. 2014/2015:
- Teaching assistant in MSc course: **DESIGN AND MANAGEMENT OF PRODUCTION SYSTEMS**, Politecnico di Milano (Lecco Campus), Language: English: 30 hours
- Tutorials teaching in the MSc course in "**DESIGN AND MANAGEMENT OF PRODUCTION PLANTS**", Politecnico di Milano , Mechanical Engineering (BV), Language: Italian: 24 hours Tutorials teaching
- Tutorial teaching in the MSc course in "**MAINTENANCE MANAGEMENT**", Politecnico di Milano, Management Engineering: 4 hours Tutorial
- Supervision of MSc thesis
- Tutor in the MSc course in "**DESIGN AND MANAGEMENT OF PRODUCTION PLANTS**", Politecnico di Milano, Mechanical Engineering
- Professor in the Elective Course: **STRATEGY OF ASSET LIFECYCLE MANAGEMENT**" for the **Executive Master in Industrial Maintenance Management (MeGMi)** (Master executive in Gestione della Manutenzione Industriale), MIP (Politecnico di Milano) e Università degli studi di Bergamo: 6 hours

A.Y. 2013/2014:
- Teaching assistant in MSc course: **DESIGN AND MANAGEMENT OF PRODUCTION SYSTEMS**, Politecnico di Milano (Lecco Campus), Language: English: 30 hours
- Tutorials teaching in the MSc course in "**DESIGN AND MANAGEMENT OF PRODUCTION PLANTS**", Politecnico di Milano , Mechanical Engineering (BV), Language: Italian: 24 hours Tutorials teaching
- Tutorial teaching in the MSc course in "**MAINTENANCE MANAGEMENT**", Politecnico di Milano, Management Engineering: 4 hours Tutorial

A.Y. 2012/2013:
- Tutorials teaching in the MSc course in "**Progettazione e gestione degli impianti di produzione**" (Design and Management of production plants),

	-	prof. Marco Garetti, Politecnico di Milano (BV): 8 hours Tutorials
	-	Tutorial teaching in the MSc course in "**Gestione della Manutenzione**" (Maintenance Management), prof. Marco Garetti, Politecnico di Milano (BV) Management Engineering:4 h Tutorial
	-	- 1,5 h lecture in the "**Maintenance Strategy**" course for the **Executive Master in Industrial Maintenance Management (meGMI)**, Politecnico di Milano e Università degli studi di Bergamo:1,5 h
Teaching abroad	-	**Professor at:** Executive Master module: "Estrategias para la Gestión de Activos en Mantenimiento", Pontificia Universidad Catolica de Valparaiso, Facultad de Ingenieria, Escuela de Ingenieria Industrial, Magister en Ingenieria Industrial, *Chile*. Language: <u>Spanish</u>
	-	**Professor at:** Academia Politecnica Militar, Chile on "Estrategias para la Gestión de Activos en Mantenimiento". Language: <u>Spanish</u>
Tutorships	-	**Tutor of Project Works -** Executive Master in "Gestione degli Asset Industriali e della Manutenzione" (Industrial asset and maintenance management" – MEGMI - MIP Politecnico di Milano and School of Management Università degli Studi di Bergamo:
		- A.Y. 2016/2017: Adam Baldini, **Terna Italia**. PW Title: Analisi tecnico-economica per la gestione del fine vita degli interruttori in alta tensione a supporto del piano industriale.
		- A.Y. 2018/2019: Paolo Fulvi. PW Title: Ottimizzazione della gestione scorte di misuratori impiegati su impianti di Cogenerazione ad Alto Rendimento.
	-	**Master Thesis supervision:** supervision of more than 15 MSc thesis of students from Industrial Engineering and Mechanical Engineering, Politecnico di Milano
	-	**Advisor** – PhD on "Asset Digital Continuity in Manufacturing", Adalberto Polenghi, Politecnico di Milano, Nov 2017 -
Invited speaker	-	**Invited panelist** at "Engineering asset management: ISO 55000 Panel" at World Congress on Engineering Asset Management, WCEAM 2015, 28th – 30th September 2015, Tampere, Finland
	-	**Invited speaker -** KOHLER - Innovation Party – Industry 4.0
	-	**Invited speaker** - PALM Doctoral Workshop 2018, Florence
Others	-	**Organizer & co-chair of the Special Session**:" Product and Asset Life Cycle Management in Smart Factories of Industry 4.0", APMS 2017 International Conference Advances In Production Management Systems, IFIP
	-	**Organizer & co-chair of the Special Session**:" Product and Asset Life Cycle Management in Smart Factories of Industry 4.0", APMS 2018 International Conference Advances In Production Management Systems, IFIP
	-	Participation to the **preparation of proposals for EU funded projects**

Certifications

Professional Certification	National professional qualification in Industrial engineering. Politecnico di Milano, October 2012
Certifications of language knowledge	ESOL Certification in English: CPE Certificate of Proficiency in English (Level C2)

Personal skills and competences

Mother tongue	**Italian**
Other language(s)	**English - C2, Spanish – C2**
Social skills and competences	- Great spirit of adaptation to any multicultural environment, many positive experiences of living abroad staying in contact with people of all nationalities - Constance and determination, also gained thanks to 11 years of classic ballet
Organisational skills and competences	- Sense of self-organization and precision - Good ability in problem solving, goal, time and stress management - Determination, flexibility, autonomy
Technical skills and	- Good command of Microsoft Office™ tools (Word™, Excel™, PowerPoint™)

competences		- Experience with the Reliability Engineering Software RMES