



curriculum vitae

PERSONAL INFORMATION

Surname	Rocca
Name	Roberto
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Nationality	Italian
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Date of birth	26/03/1991
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Education and training

• Date (from – to)	March 2014 – September 2016
• Name and type of organisation providing education and training	Politecnico di Milano – Bovisa Campus, University
Duration of the program of study	2 years
• Principal subjects/occupational skills covered	Management and optimization of energy usage and energy efficiency; design and management of renewable energy plants; implementation and management of environmental sustainability projects. Corporate management and business organization; management control and business models development; investment analysis and cost structure; optimization analytical models and statistical analysis.
• Title of qualification awarded	Master of Science in Management Engineering – Sustainability and Energy Management
Final mark obtained	100/110

graduation thesis (MSc)

Title	“Development of an assessment methodology to support Circular Economy: an application in Additive Manufacturing” (“Sviluppo di una metodologia valutativa a supporto dell’Economia Circolare: una applicazione nella Manifattura Additiva”)
Language	Italian
Supervisor	Professor Marco Taisch
Thesis Summary	The Thesis opens with a literature analysis on Circular Economy, describing its most important

	<p>characteristics and basis. Then, the literature continues with a study on Additive Manufacturing's economic-productive systems and how these can support Circular Economy. To do that, it has been analyzed the fundamental phases of Additive Manufacturing processes and the resources' flows employed in it. Additive Manufacturing's technologies have the characteristics for integrate itself in the logic of Circular Economy, because of different opportunities that can be exploited in the entire supply chain of additive products. The next part of the thesis work was later dedicated to the design, drafting and implementation of a quantitative model (Circularity Product Assessment) for the analysis and quantification of circular flows along the life cycle of a product. The final part of the elaborate was devoted to discussion of the main conclusions which led the research.</p>
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• Date (from – to)	September 2010 – February 2014
• Name and type of organisation providing education and training	Politecnico di Milano – Cremona Campus, University
Duration of the program of study	3,5 years
• Principal subjects/occupational skills covered	<p>Principal subjects of management engineering study path; corporate management and business organization; management control and business models development; investment analysis and cost structure; optimization analytical models and statistical analysis.</p> <p>Management and optimization of resource consumption within industrial process; pollution phenomena and industrial environmental impacts; environmental management systems and environmental product/process certifications; management of renewable energy plants.</p>
• Title of qualification awarded	Bachelor's degree in Management Engineering – Corporate Environmental Management
Final mark obtained	90/110

graduation thesis (Bachelor)

Title	“Environmental Labelling in the Cosmetic Market: Lumson S.p.a. case” (“ <i>Labelling ambientale nel mercato cosmetico: il caso Lumson S.p.a.</i> ”)
Language	Italian
Supervisor	Professor Gabriele Insabato
Thesis Summary	<p>The thesis regards a feasibility study has been conducted for the implementation of an environmental certification. Among the different environmental certification standards, the analysis of the tools that refer to the ISO Standards of the 14020 series was deepened, and among these, the EPD (Environmental Product Declaration) product certification was chosen. EPD represents a third-party environmental brand, intended mainly for a "Business to Business" marketing channel. The results were obtained thanks the execution of a Life Cycle Assessment with SimaPro software. Finally, aware of the competitive advantage that is able to create the obtaining of an environmental certification such as EPD, some process improvement scenarios have been created, with the aim of further making the analyzed product "green".</p>

publications and articles submitted

On February 13th, 2021, from Scopus: 7 papers, 87 citations, H-index: 4”

Author(s) and title	Rocca, R. , Rosa, P., Sassanelli, C., Fumagalli, L., Terzi, S., “Integrating virtual reality and digital twin in circular economy practices: A laboratory application case”
Language	English
Publication place	<i>Sustainability (Switzerland)</i> , vol.12(6), no.2286, 2020 https://doi.org/10.3390/su12062286
Date of publication	1/03/2020

Author(s) and title	Sassanelli, C., Rosa, P., Rocca, R. , Terzi, S., “Circular Economy performance assessment methods: a systematic literature review”
Language	English
Publication place	<i>Journal of Cleaner Production</i> , vol.229, pp. 440-453, 2019, https://doi.org/10.1016/j.jclepro.2019.05.019
Date of publication	20/08/2019

Author(s) and title	Rosa, P., Sassanelli, C., Rocca, R. , Terzi, S., "A review of Circularity Performance Assessment Methods"
Language	English
Publication place	<i>Proceedings of the Summer School Francesco Turco</i> , vol.1, pp.239-299, 2019, ISSN 22838996
Date of publication	2019

Author(s) and title	Rocca, R. , Boschi, F., Calà, A., Fantini, P., Taisch, M., "A migration methodology for factories digital transformation"
Language	English
Publication place	<i>Proceedings of the 6th European Lean Educator Conference. ELEC 2019. Lecture Notes in Networks and Systems</i> , vol.122, pp.311-319, Springer, Cham, https://doi.org/10.1007/978-3-030-41429-0_31
Date of publication	05/05/2020

Author(s) and title	Rocca, R. , Tavola, G., Boschi, F., Fantini, P., Taisch, M., "Business Case Evaluation Methodology (BCEM) for Factories Digitalization"
Language	English
Publication place	<i>The Thirteenth International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies UBICOMM 2019</i> , pp.76-81, 2019, ISSN 2308-4278
Date of publication	22/09/2019

Author(s) and title	Angioletti, C. M., Despeisse, M., Rocca, R. , "Product Circularity Assessment Methodology"
Language	English
Publication place	<i>IFIP WG 5.7 International Conference on Advances in Production Management Systems, APMS 2017</i> , vol.514, pp. 411-418, 2017, https://doi.org/10.1007/978-3-319-66926-7_47
Date of publication	29/08/2017

Author(s) and title	Angioletti, C. M., Sisca, F., Luglietti, R., Taisch, M., Rocca, R. , "Additive Manufacturing as an opportunity for supporting sustainability through implementation of circular economies"
Language	English
Publication place	<i>Proceedings of the Summer School Francesco Turco</i> , vol.13-15, pp. 25-30, 2016, ISSN 22838996
Date of publication	2016

certifications

Certifications of language knowledge	TOEIC, September 2020, 860 (C1)
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Work experience, stages, studies abroad

• Date (from – to)	November 2020 - present
• Name and address of firm/university	Politecnico di Milano – Manufacturing Group at the Department of Management, Economics and Industrial Engineering, Via Lambruschini 4/B, Milano
• Type of business or sector	Research
• Type of employment	PhD student (XXXVI cycle) Research field: "A novel Industrial architecture for Sustainable Manufacturing"

• Date (from – to)	March 2018 – October 2020
• Name and address of firm/university	Politecnico di Milano – Manufacturing Group at the Department of Management, Economics and Industrial Engineering, Via Lambruschini 4/B, Milano
• Type of business or sector	Research
• Type of employment	Research fellow

	<p>Grant title: "Experimental development and verification of Smart planning and Smart Operations models as part of the Advanced Cosmetic Manufacturing project"</p> <p>Grant holder: Professor Luca Fumagalli</p>
<ul style="list-style-type: none"> • Main activities and responsibilities 	<p>Involvement within the following research project and activities:</p> <ul style="list-style-type: none"> - FENIX (Future business models for the Efficient recovery of Natural and Industrial secondary resources in eXtended supply chains contexts); Funder: EU Commission. Within this project, I deal with Circular Economy and Industry 4.0 research topics. In particular, my activities regard (i) the analysis, evaluation and design of innovative Circular Business Models within WEEE supply chains; (ii) the assessment of Circular Economy degree of the supply chains involved; (iii) the exploitation of digital technologies supporting Circular Economy paradigm and the development of simulation tools through Digital Twin and Augmented Reality for disassembly process optimization at the Industry4.0 Lab of the Politecnico di Milano. - AD-COM (Advanced Cosmetic Manufacturing); Funder: Lombardy Region. The project involved several cosmetic company in Lombardy Region. I'm involved in (i) the research observatory of the project, dealing with sustainability trends that characterize cosmetic and beauty sector and in (ii) the digital maturity assessment of the companies involved in the project. - Related to AD-COM project, I'm also involved in the set-up activities of the future "Digital and Sustainable Beauty" research observatory of the School of Management of the Politecnico di Milano. - TF KnowNet (Teaching Factory Knowledge Network); Funder: EU Commission. The project aims to deliver a program where students, researchers and companies work together to mutually develop skills, promote and share expert knowledge through co-creating solutions to industrial manufacturing challenges. My role within the project regards the analysis of the state-of-the-art of the current educational practices in Manufacturing fields. - Optibend (Zero defects manufacturing of Home Appliances Bending Workpieces); Funder: EU Commission. I'm involved in the (i) industrialization and experimentation in the Whirlpool line (use case line), and in the (ii) dissemination and exploitation of the project, analysing also the business impacts. - Active role in research and operational activities at the Industry 4.0 Lab of the Politecnico di Milano, especially related to the development and exploitation of the Digital Twin of the Lab. <p>Involvement within the following educational and teaching activities:</p> <ul style="list-style-type: none"> - MSc' thesis co-supervisor (5 students per year); - Delivering lectures at Master GMIM (master post-graduation level – MIP Graduate School of Business) about: Industry 4.0 Lab of Politecnico di Milano; - Delivering lectures at bachelor course (course of Gestione degli Impianti Industriali – Luca Fumagalli – 10 CFU and course of Gestione degli Impianti Industriali – Elisa Negri – 10 CFU) about: Sustainability, Sustainable Manufacturing, Circular Economy, Life Cycle Assessment and Material Flow Analysis, Design and Management of Industrial Plants (heating systems, electrical systems, air conditioning systems).

<ul style="list-style-type: none"> • Date (from – to) 	September 2017 - March 2018
<ul style="list-style-type: none"> • Name and address of firm/university 	Fondazione Politecnico di Milano – Piazza Leonardo da Vinci, 32, 20133 Milano Activities carried out at Politecnico di Milano – Manufacturing Group at the Department of Management, Economics and Industrial Engineering, Via Lambruschini 4/B, Milano
<ul style="list-style-type: none"> • Type of business or sector 	Research
<ul style="list-style-type: none"> • Type of employment 	Research fellow (coordinated and continuous collaboration contract)
<ul style="list-style-type: none"> • Main activities and responsibilities 	<p>During this period, I mainly dealt with the set-up phase from technical and operational point of view of the Industry 4.0 Lab of the Politecnico di Milano.</p> <p>Involvement within the following research project:</p> <ul style="list-style-type: none"> - FAR-EDGE (Factory Automation Edge Computing Operating System Reference implementation); Funder: EU Commission. The project regarded the evaluation and design of a novel industrial reference architecture for the exploitation of Edge-Computing and Distributed Ledger technologies within industrial domain. I mainly worked on the business and financial assessment of the technologies implementation, as well as on the migration strategies toward digital transformation.

• Date (from – to)	October 2016 – August 2017
• Name and address of firm/university	Politecnico di Milano – Manufacturing Group at the Department of Management, Economics and Industrial Engineering, Via Lambruschini 4/B, Milano
• Type of business or sector	Research
• Type of employment	Research fellow (coordinated and continuous collaboration contract) Grant title: “Support for the development and validation of a holistic model for the Factory of the Future” Grant holder: Professor Marco Taisch
• Main activities and responsibilities	During this period, I mainly dealt with the Circular Economy Performance Assessment methodology development and testing . The methodology comes from my MSc thesis work and represents a quantitative methodology to assess the Circular Economy degree of production systems , analysing and quantifying their resource consumption . The methodology has been tested with some real industrial cases.

Personal skills and competences

Acquired in the course of life and career but not necessarily evidenced by formal certificates and diplomas.

Mother tongue	Italian
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Other language(s)

	English
• reading	Good
• writing	Good
• speaking	Good

Social skills and competences <i>Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential (e.g. Culture and sports), etc.</i>	Good ability to listen and understand people and problems and to analyze and propose solutions consistent with the interlocutors needs; good mediation and communication skills; constant openness to innovation, enrichment of professional knowledge and personal culture.
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Organisational skills and competences <i>E.g. coordination and management of people, projects and budgets; at work, in voluntary work (e.g. culture and sports) and at home, etc.</i>	Good attitude to personal relationships and teamwork; ability to work under pressure maintaining attention to detail; ability to organize and manage time, giving priority and managing multiple projects with deadline constraints.
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Technical skills and competences <i>With computers, specific kinds of equipment, machinery, etc.</i>	<ul style="list-style-type: none"> - Strong orientation towards general energy topics, energy efficiency, energy production from renewable sources and the management of environmental sustainability projects; implementation of Life Cycle Assessment methodology - Strong orientation towards Industry 4.0 paradigm and digital technologies - Good knowledge of Microsoft Office suite - Knowledge of statistical software R - Knowledge of SimaPro software for Life Cycle Assessment - Good knowledge of Arduino IDE
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Artistic skills and competences <i>Music, writing, drawing etc.</i>	/
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Other skills and competences <i>Competences not mentioned above.</i>	<p>Strong orientation toward start-up ecosystems:</p> <ul style="list-style-type: none"> - Co-founder and CTO at speaRoad LTD since June 2018. Co-author and Co-owner of
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	<p>the patent: "Eletronic system for pedal vehicles" (Deposit number: 102017000110966; Submission date: 04/10/2017).</p> <ul style="list-style-type: none">- Jury member of Politecnico di Milano at Legambiente start-up award "<i>Premio Innovazione Amica dell'Ambiente</i>" – Circular Economy section, Edition of 2019.- March 2017, winner of the project "Open Ap Talent Garden" at Polo Tecnologico di Pavia – Project name: Liux.com.
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Additional information	<p>Personal passions:</p> <ul style="list-style-type: none">- Sport: soccer, skiing;- Universe sciences: astronomy, cosmology, astrophysics.
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