

**Alessia Napoleone**  
**Curriculum Vitae**

Department of Management, Economics and  
Industrial Engineering,  
Politecnico di Milano,  
Milano, Italy

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## **EDUCATION AND TRAINING**

- 2015 – Present    **Ph.D. Candidate**, Program of Industrial Engineering, Doctoral School of Management, Economics and Industrial Engineering, Politecnico di Milano, Milan, Italy.  
Mentors: Profs. Alessandro Pozzetti and Marco Macchi
- 2017 – 2018    **Visiting period at the University of Michigan**, Department of Mechanical Engineering, University of Michigan, Ann Arbor, USA.
- 2012 – 2014    **M. Sc. (Degree 107/110)** in Management Engineering, Department of Management, Economics and Industrial Engineering, Politecnico di Milano, Milan, Italy.
- 2008 – 2011    **B. Sc. (magna cum laude)** in Management Engineering, with a focus on Projects and Infrastructures Management, University of Naples, Naples, Italy.

## **RESEARCH INTERESTS**

- Reconfigurable Manufacturing Systems and Reconfigurability as a capability
- Standardization and Industry 4.0
- Cyber-Physical Systems and their implications on Reconfigurability of factories
- Reconfigurability and Process Industries

## **RESEARCH EXPERIENCE**

2015 – Present    **Ph.D. candidate**, Program of Industrial Engineering, Department of Management, Economics and Industrial Engineering, Politecnico di Milano, Milan, Italy.

Mentors: Profs. Alessandro Pozzetti and Marco Macchi

Research: Structuring reconfigurability as a capability to be competitive in manufacturing.

Abstract: Nowadays, manufacturing firms are dealing with the unpredictability and volatility of market requirements. Thus, they are required to develop the capability to

be reconfigurable. The purpose of this thesis is structuring reconfigurability of a factory as a capability to be competitive. To this end, it develops a framework of characteristics influencing and enriching reconfigurability that allows acknowledging that (i) characteristics act in different periods of system lifecycle and that (ii) there is a game-of strength between these characteristics, which is directly responsible for the achievement of this capability.

2018 – Present    **“Factory-Logistics” Project, Milan, Italy**

Working group: Politecnico di Milano (under the supervision of profs. Marco Macchi and Marco Melacini) and Incas (Italian provider of solutions of supply chain automation)

Research: Investigation on Italian-SMEs best-practices for highly responsive manufacturing systems. Specifically, the research focuses on how different digital solutions are implemented to enhance the real-time coordination between production system and logistics.

2017 – 2018    **Visiting period at the University of Michigan, Department of Mechanical Engineering, University of Michigan, Ann Arbor, USA.**

Mentor: Prof. Jun Ni

Research project: Investigation on measures of reconfigurability of manufacturing firms.

2016 – 2017    **“Industry 4.0” Observatory. Politecnico di Milan, Milan, Italy.**

Observatory directors: Profs. Andrea Sianesi, Marco Taisch, Alessandro Perego, Marco Macchi and Giovanni Miragliotta.

Projects: Industry 4.0 Observatory is an Observatory within the Department of Management, Economics and Industrial Engineering of the Politecnico di Milano that aims at creating awareness and knowledge among practitioners on the current digital revolution enabled by smart technologies.

Research: Interoperability for the 4.0 Factory - standards, architectures and approaches. Involving also interviews to providers (e.g. Siemens, Hylasoft, INCAS) of hardware and software logistics and managerial solutions for manufacturing firms. A special focus has been put on how MES solutions are going to evolve in order to satisfy new needs related to Industry 4.0.

2014 – 2015    **Graduation thesis. “Il monitoraggio delle condizioni e le sue implicazioni per le decisioni di gestione nel ciclo di vita degli asset”.**

Mentor: Prof. Marco Macchi.

Research: In this thesis, a tool to evaluate the level of evolution of monitoring in power distribution is proposed. The model is then tested on 3 Italian distribution companies. The results of the research show that adopting advanced monitoring does not just mean having innovative tools, the process has to be integrated with a sufficiently mature risk management process, implemented by the Maintenance function.

## **TEACHING EXPERIENCE**

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| 2017 – 2018 | Teaching assistant (esercitatrice) for the course of “Impianti Industriali e Gestione della Produzione” addressed to bachelor students of Automation Engineering. Politecnico di Milano, Milan |
| 2016 – 2017 | Teaching assistant (esercitatrice) for the course of “Impianti Industriali e Gestione della Produzione” addressed to bachelor students of Automation Engineering. Politecnico di Milano, Milan |
| 2016 – 2017 | Tutor for the course of “Industrial Technologies”, delivered in English to master students of Management Engineering. Politecnico di Milano, Milan   |
| 2015 – 2016 | Teaching assistant (esercitatrice) for the course of “Impianti Industriali e Gestione della Produzione” addressed to bachelor students of Automation Engineering. Politecnico di Milano, Milan |
| 2015 – 2016 | Teaching assistant (esercitatrice) for the course of “Design and Management of Production Systems” delivered in English to master students of Mechanical Engineering.                          |

## **AWARDS**

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| 2017 | Best research proposal award at the “APMS 2017” Doctoral Workshop |
| 2017 | Best research impact of the Industry 4.0 Observatory              |

## **FELLOWSHIPS**

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| 2015 - Present | PhD Fellowship, Doctoral School of Management, Economics and Industrial Engineering, Politecnico di Milano |
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## **MEMBERSHIPS IN PROFESSIONAL SOCIETIES**

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| 2015 - Present | Junior member of the Associazione Italiana Docenti Impianti Industriali (AIDI) |
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## SUMMER SCHOOLS AND DOCTORAL WORKSHOPS

- 2018 Summer school Francesco Turco, September 12 – 14, Palermo, Italy
- 2017 Summer school Francesco Turco, September 13 – 15, Mondello, Palermo, Italy
- 2017 Research proposal presentation at the APMS doctoral workshop (winner of the Best Research Proposal Award), September 3, Hamburg, Germany
- 2016 Summer school Francesco Turco, September 13–15, Naples, Italy.
- 2016 Research proposal presentation at the “Phd on the go” Doctoral Workshop, May 12-13, Lecce, Italy.

## JOURNAL PUBLICATIONS

1. **Napoleone, A.**, Pozzetti, A. & Macchi, M. 2018. A framework to manage reconfigurability in manufacturing. *International Journal of Production Research*. 56(11), 3815-3837, DOI: 10.1080/00207543.2018.1437286.

## ARTICLES PRESENTED IN INTERNATIONAL CONFERENCES

1. **Napoleone, A.**, Macchi, M. and Pozzetti, A. 2018. A literature-based definition of the Cyber-Physical Systems under the lens of reconfigurability. APMS Conference 2018. August 26-30, Seoul, Korea.
2. **Napoleone, A.**, Pozzetti, A. & Macchi, M. 2018. Core Characteristics of Reconfigurability and their Influencing Elements. INCOM Conference 2018. June 11-13, Bergamo, Italy.
3. **Napoleone, A.**, Macchi, M. and Pozzetti, A. 2017. An investigation on implemented actions to improve responsiveness in manufacturing firms. APMS Conference 2017. September 3-7, Hamburg, Germany.
4. **Napoleone, A.**, Roda, I., and Macchi, M. 2016. The Implications of Condition Monitoring on Asset-Related Decision-Making in the Italian Power Distribution Sector. IFAC Conference 2016, October 19 – 21, Biarritz, France.
5. **Napoleone, A.**, Macchi, M. and Pozzetti, A. 2016. Planning the Reconfiguration of Manufacturing Systems: A Literature Review. Summer School Francesco Turco, September 13–15, Naples, Italy.