Flavia Monti

Education

2021–current — **Ph.D. in Engineering in Computer Science (XXXVII cycle)**, *Sapienza Università di Roma*.

Research Interests — Industry 4.0 and Smart Manufacturing. Specifically the integration of new technologies and approaches like computer vision, machine learning and artificial intelligence with the purpose of improving production quality, reducing costs, increasing machinery uptime, analyze failures and defects towards zero defect manufacturing.

2018–2021 — **Master's Degree in Engineering in Computer Science**, *Sapienza Università di Roma*.

Advisor — Prof. Francesco Leotta

Thesis — *Vision based real-time die cutting defect detection*

The aim of the thesis is the implementation of a vision-based software able to monitor in real-time the cardboard production and to identify its errors.

2014–2018 — **Bachelor's Degree in Engineering in Computer Science and Automation**, *Sapienza Università di Roma*.

Experiences

Jan - Apr 2024 — **Visiting Researcher**, *Technical University of Munich*, Munich (Germany), TUM School of Computation, Information and Technology.

Sep 2022 — **Visiting Researcher**, *Cyprus University of Technology*, Limassol (Cyprus), Department of Electrical Engineering & Information Technologies.

Jul 2022 — **Summer School On Service-Oriented Computing**, *Hersonissos, Crete (GR)*.

2021 — **Software Engineer**, *Sapienza Università di Roma*.
Development of an image processing prototype for I4.0.

Teaching Activities

A.Y. 2024/25 — **Teaching Assistant**, *Progettazione del Software*, Sapienza Università di Roma.

A.Y. 2023/24 — **Teaching Assistant**, *Progettazione del Software*, Sapienza Università di Roma.

A.Y. 2022/23 — **Teaching Assistant**, *Progettazione del Software*, Sapienza Università di Roma.

A.Y. 2022/23 — **Lecturer**, *Software analysis and design methodologies*, ITS Academy Lazio Digital.

A.Y. 2021/22 — **Teaching Assistant**, *Progettazione del Software*, Sapienza Università di Roma.

Tutorials and Talks

Jun 2024 — **Tutorial**, *Engineering Information Systems with LLMs and AI-based techniques*, Massimo Mecella, Marco Calamo, <u>Flavia Monti</u>, 36th International Conference on Advanced Information Systems Engineering, CAiSE 2024, Limassol, Cyprus.

Jan 2024	**Invited Talk**, *Agility and Resilience in Smart Manufacturing*, Technical University of Munich, Munich, Germany.
Nov 2023	**Tutorial**, *Services in Industry 4.0. Modeling and composition for agile supply chains.*, Francesco Leotta, <u>Flavia Monti</u>, Luciana Silo, 21st International Conference on Service-Oriented Computing, ICSOC 2023, Rome, Italy.
Jun 2023	**Tutorial**, *Services in Industry 4.0. Modeling and composition.*, Francesco Leotta, Massimo Mecella, <u>Flavia Monti</u>, Luciana Silo, 17th Symposium and Summer School on Service-Oriented Computing, SummerSOC 2023, Hersonissos, Crete, Greece.
Jul 2022	**Talk**, *Intelligence in Industry 4.0*, DESTINI H2020 Mobility Satellite Event - SummerSOC 2022.
Jun 2022	**Tutorial**, *Engineering Information Systems in Smart Manufacturing*, Francesco Leotta, Massimo Mecella, <u>Flavia Monti</u>, 34th International Conference on Advanced Information Systems Engineering, CAiSE 2022, Leuven, Belgium.
Jun 2022	**Panel Speaker**, *AI, AR and governance in manufacturing and I4.0/I5.0*, Geert Poels, Andrei Bertic, Raimundas Matulevičius, <u>Flavia Monti</u>, Erik Proper, 34th International Conference on Advanced Information Systems Engineering, CAiSE 2022, Leuven, Belgium.
Jan 2022	**Talk**, *Transformation in Traditional Industry: Die Cutter 4.0*, Jerin George Mathew, <u>Flavia Monti</u>, Second School on Smart Data Processing and Systems of Deep Insight - DESTINI H2020 project.

Projects

2022–current	**Electrospindle 4.0**, the goal of Electrospindle 4.0 is to apply innovative technologies to realize a family of Zero Defects products (spindles), produced through a Zero Defects Manufacturing process. In the Electrospindle 4.0 project, my work primarily involved supporting research and contributing to the development of early stage solutions for managing data analyses.
2021–current	**TopKontrol**, *Die Cutter 4.0 Industrial Project*, the aim of TopKontrol is the development of a monitoring and quality control system for packaging production. My work on TopKontrol project is primarily focused on the development of a computer-vision software component, able to identify, in real-time, cardboard defects during production. Moreover, my work is also focused on the improvement of a monitoring software component responsible for collecting, via Bluetooth low energy sensors, usage data of the die-cutters machine component.
2022–2023	**BinTraWine**, *Blockchain, Tracking and Tracing solutions for Wine*, the aim of BinTraWine is to employ blockchain technology for traceability in the wine supply chain.
2021-2022	**DESTINI H2020 Twinning Project**, *Smart Data Processing and Systems of Deep Insight*, the aim of DESTINI is to facilitate transfer of scientific knowledge and expertise, as well as of best research practices from the leading institutions to Cyprus University of Technology.

Service

2023	**Proceedings Chair**, *21st International Conference on Service-Oriented Computing*, ICSOC 2023.
2023	**Publication Chair**, *21st International Conference on Service-Oriented Computing*, ICSOC 2023.
	External Reviewer, *6th International Conference on Process Mining (ICPM 2024), 5th International Conference on Process Mining (ICPM 2023), 31st Symposium on Advanced Database Systems (SEBD 2023), Journal of Data and Information Quality (JDIQ).*

Publications

[1] F. Monti, F. Leotta, J. Mangler, M. Mecella, and S. Rinderle-Ma, "NL2ProcessOps: Towards LLM-guided Code Generation for Process Execution," in *Business Process Management Forum - BPM 2024 Forum, Proceedings*, Springer, 2024.

[2] F. Monti, J. G. Mathew, F. Leotta, A. Koschmider, and M. Mecella, "On the Application of Process Management and Process Mining to Industry 4.0," in *Software and Systems Modeling*, Springer, 2024.

[3] S. Agostinelli, F. De Luzi, M. Manglaviti, M. Mecella, F. Monti, F. M. Petriccione, M. Mesenzani, A. Pollini, A. Verioli, and U. Amadio, "BinTraWine - Blockchain, Tracking and Tracing solutions for Wine," in *RPE@ CAiSE*, 2023.

[4] M. Calamo, A. De Franceschi, G. De Santis, F. Leotta, C. Mazzaroppi, J. G. Mathew, M. Mecella, F. Monti, C. Sabatino, L. Visani, and M. Visani, "TopKontrol: a monitoring and quality control system for the packaging production," in *RPE@ CAiSE*, 2023.

[5] G. De Giacomo, M. Favorito, F. Leotta, M. Mecella, F. Monti, and L. Silo, "AIDA: A Tool for Resiliency in Smart Manufacturing," in *Intelligent Information Systems: CAiSE Forum 2023, Zaragoza, Spain, June 12–16, 2023, Proceedings*, Springer, 2023.

[6] F. Leotta, F. Monti, and L. Silo, "Services in Industry 4.0. Modeling and Composition for Agile Supply Chains," in *Service-Oriented Computing – ICSOC 2023 Workshops*, Springer, 2023.

[7] F. Monti, L. Silo, F. Leotta, and F. Mecella, "On the Suitability of AI for Service-based Adaptive Supply Chains in Smart Manufacturing," in *2023 IEEE International Conference on Web Services (ICWS)*, IEEE, 2023.

[8] F. Monti, L. Silo, F. Leotta, and F. Mecella, "Services in smart manufacturing: comparing automated reasoning techniques for composition and orchestration," in *Service-Oriented Computing: 17th Symposium and Summer School, SummerSOC 2023, Hersonissos, Crete, Greece, June 25–July 1, 2023, Revised Selected Paper*, Springer, 2023.

[9] F. Amadori, M. Bardani, E. Bernasconi, F. Cappelletti, T. Catarci, G. Drudi, M. Ferretti, L. Foschini, P. Galli, M. Germani, *et al.*, "Electrospindle 4.0: Towards Zero Defect Manufacturing of Spindles.," in *RCIS Workshops*, 2022.

[10] F. Leotta, J. G. Mathew, M. Mecella, and F. Monti, "Supporting Zero Defect Manufacturing Through Cloud Computing and Data Analytics: the Case Study of Electrospindle 4.0," in *International Conference on Advanced Information Systems Engineering*, Springer, 2022.

[11] F. Leotta, J. G. Mathew, M. Mecella, and F. Monti, "Towards an Information Systems-driven Maturity Model for Industry 4.0," in *Enterprise, Business-Process and Information Systems Modeling: 23rd International Conference, BPMDS 2022 and 27th International Conference, EMMSAD 2022, Held at CAiSE 2022, Leuven, Belgium, June 6–7, 2022, Proceedings*, 2022.

[12] L. Esposito, S. V. Veneruso, F. Leotta, F. Monti, J. G. Mathew, and M. Mecella, "Unsupervised Segmentation of Human Habits in Smart Home Logs through Process Discovery.," in *ITBPM@ BPM*, 2021.

Software Projects

Software projects are available at `https://github.com/iaiamomo`.

Computer skills

Programming languages	PYTHON, JAVA, C#, C, SQL

Libraries	OpenCV
Development Tools	Git (Version Control), Docker, HTML, Eclipse, Visual Studio, Visual Studio Code
Operating Systems	Microsoft Windows, Linux, macOS, Google Android
Software	Microsoft Office, LaTex

▬▬▬ Languages

Italian	**Native language**
English	**Intermediate**

I declare that the information in this Curriculum Vitae is accurate and true. I authorize the processing of my personal data in the cv in accordance with Article 13 of Legislative Decree No. 196 of June 30, 2003 "Code on the Protection of Personal Data" and Article 13 of the GDPR (EU Regulation 2016/679).

Rome, 24/04/2024
Flavia Monti