Marco Vannucci

Curriculum Vitae

Identification

Name	Marco Vannucci
Address	
Telephone(s)	
Email	
Nationality	
Date of birth	
Gender	
Researchgate	

Bibliometric indicators

Overall number of publications:	88
Overall number of journal publication:	35
Last 5 years (2017-2021) publications:	26
Overall number of citations:	828
Last 5 years (2016-2020) citations:	530
H–index:	15

Source: SCOPUS

Experience

2017–Present **Research Associate (RTD–A)**, Scuola Superiore Sant'Anna, Pisa, Disciplinary-scientific sector: ING–INF/03, Competition sector: 09/F2.

Research activities within National, European (RFCS, 6th framework programs) projects and third parties collaborations with industries gained through the involvement in a large number of projects. The activities carried out within the mentioned projects concern the key aspects of industrial automation with a special focus on the process/product control and optimization.

2006–2017 **Research fellow**, Scuola Superiore San'Anna, Pisa, Type of contract: research–grant.

Research activities within National, European (RFCS, 6th framework programs) projects and third parties collaborations with industries gained through the involvement in a large number of projects.

2003–2006 **PhD. Student**, Scuola Superiore San'Anna, Pisa.

Main competences

- Machine learning
- Data analytics, Big Data
- Artificial Intelligence
  - neural networks
  - deep–learning
  - neuro–fuzzy systems
- Optimization
  - main mathematical techniques;
  - evolutionary algorithms
  - multi–objective optimization
- Modelling
  - standard techniques;
  - AI–based models
  - hybrid models
- Software design and development

Research activities

Management and participation within more than 70 EU, national, regional and third–parties research projects. Main contributions involve:
- data analysis
- process modelling through the exploitation of artificial intelligence techniques
- optimization via both standard and evolutionary algorithms
- software design and implementation

Coordination activities

- Scientific responsible for Scuola Superiore Sant'Anna of the *Artificial Intelligence to support Planning of Virtualized Network Functions project in collaboration with Vodafone Italia.*
- *Team leader on for data processing aspects of* Obiettivo Operativo 4 *of the PROMAS project:* Development and implementation of tools for the management and advanced analysis of Big Data for pre and post processing on test bench data.
- *Tutor for numerous graduate and master thesis in the field of artificial intelligence, data mining and optimization within ICT–COISP center.*

Teaching

2021   Course: *Machine learning fundamentals, algorithms and applications through Python* within PhD. IN EMERGING DIGITAL TECHNOLOGIES, Scuola Superiore Sant'Anna

2020   Course: *Machine learning fundamentals, algorithms and applications through Python* within PhD. IN EMERGING DIGITAL TECHNOLOGIES, Scuola Superiore Sant'Anna

2019   Course: *Machine learning fundamentals, algorithms and applications through Python* within PhD. IN EMERGING DIGITAL TECHNOLOGIES, Scuola Superiore Sant'Anna

2007	Course: *Numerical modelling applied to steelmaking* within 2nd LEVEL MASTER ON STEELMAKING, Politecnico di Torino
2007	Course: *Tools for statistical analysis* within 2nd LEVEL MASTER ON STEELMAKING, Politecnico di Milano
2005	Course: *Mathematical tools* within MASTER ON ENVIRONMENTAL CONTROL AND MANAGEMENT, Scuola Superiore Sant'Anna

EU Tasks

RFCS Expert evaluator, *for the research proposal submitted to the annual calls to the Research Fund for Coal and Steel TGS9* Factory-wide and environmental control.

Education

2006	**PhD. Innovative technologies – Perceptual robotics, Scuola Superiore Sant'Anna, Pisa**, *Level: 100/100 cum laude*, **Thesis title**: *Robotica, sistemi di visione e intelligenza artificiale applicati a problematiche industriali*, **Supervisors**: Prof. M. Bergamasco, Prof. P. Ancilotti, Dr. V. Colla.
2001	**Master degree in Computer science, Universitá degli studi di Pisa**, *Level: 108/110*, **Thesis title**: *Robotica, sistemi di visione e intelligenza artificiale applicati a problematiche industriali*, **Supervisors**: Prof. A. Starita.
1995	**Scientific high school diploma**, *Liceo Scientifico Statale Ulisse Dini*, Pisa, *Level: 52/60*.

Training

2004	**Machine Learning Summer School (MLSS), Berder Island, France, September 12th–25th 2004**, *Including 14 courses given by 15 distinguished authorities from the field on the topics which are at the core of modern Learning Theory and practical sessions providing a hands-on experience of working with Machine Learning algorithms.*.

Computer skills

Deep knowledge of common Unix and Microsoft OS and tools and of the following **programming languages**: MatLab, Python, C++, C#, Visual Basic, VB script, Prolog, LISP. Familiarity with common artificial intelligence, neural networks and data processing **libraries** associated to MatLab, Python programming languages.

Languages

Italian	**Mother–tongue**	
English	**Proficient user**	*Understanding: C1, Speaking: C1, Writing: C1*
French	**Proficient user**	*Understanding: C1, Speaking: C1, Writing: C1*

Awards

2016 The paper *Smart under–sampling for detection of rare patterns in unbalanced datasets* was judged worthy of the **Best research paper award** at the 8th KES **Intelligent Decision Technologies conference**, held in Tenerife, Spain, in June 2016

2015 The project *IntuitionMilan: market trends forecast through advanced clustering and predictive algorithms* selected as **finalist** at the **TIM BigData Challenge 2015**

Conferences

Speaker

ESANN2003 European Symposium on Artificial Neural networks, April 2003, Bruges, Belgium.

KES2003 Knowledge-Based Intelligent Information and Engineering Systems, September 2003, University of Oxford, United Kingdom.

CTM2003 Congreso de Ciencia y Tecnología Metalúrgicas, November 2003, Madrid, Spain.

GSRN03 Giornata di studio sulle reti neurali, Pavia, May 2003.

ESANN2004 European Symposium on Artificial Neural networks, April 2004, Bruges, Belgium.

MATHMOD06 Vienna International Conference on Mathematical Modelling, February 2006, Vienna, Austria.

SMEA07 SMEA conference and exibition: Effect of Melting, Refining and Casting on Product Quality and Properties 4th & 5th July 2007, Sheffield UK

MANUFUTUREFP7 Collaborations in the Manufacturing Sector, Zurich, Switzerland, 17-18 January 2008

SAM2 2nd International Seminar on Society and Materials, SAM2, Nantes, 24-25 April 2008

EMS08 IEEE European Modelling Symposium, Liverpool UK, September 2008

CSEDU 2009 International Conference on Computer Assisted Education, CSEDU 2009, May 2009, Lisbon, Portugal

IWANN09 International Workshop on Artificial Neural Networks IWANN'09, Salamanca, Spain, June 9-12 2009

ISIT09 International conference on information society and information technology ISIT09, October 2009, Novo Mesto, Slovenia

EMS09 IEEE European Modelling Symposium, Athens, Greece, November 2009

EUROSIM2010 7th congress on modelling and simulation, Prague, September 2010

EMS10 IEEE European Modelling Symposium, Pisa, Italia, November 2010

IWANN11 International Workshop on Artificial Neural Networks IWANN'11, Malaga, Spain, June 9-12 2011

EMS11 IEEE European Modelling Symposium, Madrid, Spain, November 2011

IPMU 2012 14th International conference on information processing and management of uncertainty in knowledge-based systems, July 2012, Catania, Italy

MMM 2012	IFAC workshop on automation in the mining, mineral and metal industries, Gifu, Japan, September 2012
EMS12	IEEE European Modelling Symposium, Malta, November 2012
ISMS 2013	4th International conference on intelligent systems, modelling and simulation. Bangkok, Thailand, Jan. 2013
MIM 2013	IFAC conference on manufacturing, modeling, management and control, Saint Petersburg, Russia, June 2013.
PRES 2014	21st International Congress of Chemical and Process Engineering CHISA 2014 Prague, August 2014
WIRN 2015	25th Italian Workshop on Neural Networks, Vietri Sul Mare (Italy); 05/2015
KES-IDT 2015	7th International KES Conference on Intelligent Decision Technologies, KES-IDT-15, At Sorrento (Italy)
IWANN 2015	13th International Work-Conference on Artificial Neural Networks, IWANN 2015, Palma De Mallorca, Spain, June 2015
KES-IDT 2016	8th International KES Conference on Intelligent Decision Technologies, KES-IDT-16, June 2016, Tenerife (Spain)
MIM16	8th IFAC conference on manufacturing, modeling, management and control, Troyes, France, July 2016.
WIRN 2016	26th Italian Workshop on Neural Networks, Vietri Sul Mare (Italy), May 2016
EANN2016	17th International conference on Engineering Applications of Neural Networks, September 2016, Aberdeen, Scotland
EMS16	IEEE European Modelling Symposium, Pisa, November 2016
IWANN2017	14th International Work-Conference on Artificial Neural Networks, IWANN 2017, Cadiz, Spain, June 2017
KES-IDT 2017	9th International KES Conference on Intelligent Decision Technologies, KES-IDT-17, June 2017, Vilamoura (Portugal)
WCCI2018	IEEE World Congress on Computational Intelligence, July 2018, Rio De Janeiro (Brazil)
EANN2019	20th International conference on Engineering Applications of Neural Networks, May 2019, Crete (Greece)
KES-IDT 2019	11th International KES Conference on Intelligent Decision Technologies, KES-IDT-19, June 2019, St. Julian (Malta)
KES-IDT 2020	12th International KES Conference on Intelligent Decision Technologies, KES-IDT-20, June 2020, virtual event
ESTEP 2020	Third ESTEP workshop on Impact and opportunities of artificial intelligence in the steel industry, November 2020, virtual event
MAS 2021	International Conference On Modeling and Applied Simulation, September 2021, virtual event

Chairman

EMS 2010	for sessions *Intelligent Systems* and *Methodologies, Tools and Operations Research*

IWANN 2011	for session *Hybrid Intelligent Systems*
WIRN 2015	for session *Industrial Applications of Computational Intelligence Approaches*
IWANN 2015	for session *Advances in Computational Intelligence*
WIRN 2016	for session *Industrial Applications of Computational Intelligence Approaches*
EMS 2016	for session *Intelligent Systems*
IWANN 2017	for session *Image and Signal Processing*

Organization and management

EMS2010	Member of the **organizing committee**
ISMS2013	Scientific **program chair**
WIRN 2015	organizer of the special session *Industrial Applications of Computational Intelligence Approaches*
EMS2016	Member of the **organizing committee**
WIRN 2016	organizer of the special session *Industrial Applications of Computational Intelligence Approaches*
IMS 2022	organizer of the special session *Intelligent production systems for the iron and steel sector*
WCCI 2022	organizer of the special session *Computational Intelligence for metal science and technology*

Editor

EMS2016	Editor of the proceedings of the 10th European Modelling Symposium, EMS2016

Publications

1. Cucinotta, T., Lanciano, G., Ritacco, A., Brau, F., Galli, F., Iannino, V., Vannucci, M., Artale, A., Barata, J., Sposato, E.: *"Forecasting operation metrics for virtualized network functions"* in Proceedings - 21st IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing, CCGrid 2021, .
2. Cateni, S., Colla, V., Vannucci, M.: *"A Combined Approach for Enhancing the Stability of the Variable Selection Stage in Binary Classification Tasks"* in Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), .
3. Vannucci, M., Colla, V.: *"Automatic steel grades design for Jominy profile achievement through neural networks and genetic algorithms"* in Neural Computing and Applications, .
4. Lanciano, G., Ritacco, A., Brau, F., Cucinotta, T., Vannucci, M., Artale, A., Barata, J., Sposato, E.: *"Using Self-Organizing Maps for the Behavioral Analysis of Virtualized Network Functions"* in Communications in Computer and Information Science, .
5. Colla, V., Vannucci, M., Valentini, R.: *"Prediction of the mechanical properties of rebars through a combination of finite element and data-driven models [Predizione delle proprietà meccaniche di barre nervate per le costruzioni tramite la combinazione di modelli agli elementi finiti e modelli data-driven]"* in Metallurgia Italiana, .
6. Lanciano, G., Ritacco, A., Cucinotta, T., Vannucci, M., Artale, A., Basili, L., Sposato, E., Barata, J.: *"SOM-based behavioral analysis for virtualized network functions"* in Proceedings of the ACM Symposium on Applied Computing, .

7. Galli, F., Ritacco, A., Lanciano, G., Vannocci, M., Colla, V., Vannucci, M.: "*Self-supervised pre-training of CNNs for flatness defect classification in the steelworks industry*" in International Journal of Advances in Intelligent Informatics, .
8. Cucinotta, T., Lanciano, G., Ritacco, A., Vannucci, M., Artale, A., Barata, J., Sposato, E., Basili, L.: "*Behavioral analysis for virtualized network functions: A som-based approach*" in CLOSER 2020 - Proceedings of the 10th International Conference on Cloud Computing and Services Science, .
9. Vannucci, M., Colla, V., Cateni, S.: "*Genetic operators impact on genetic algorithms based variable selection*" in Smart Innovation, Systems and Technologies, .
10. Colla, V., Vannucci, M., Bacchi, L., Valentini, R.: "*Neural networks-based prediction of hardenability of high performance carburizing steels for automotive applications*" in Metallurgia Italiana, .
11. Vannucci, M., Colla, V., Dettori, S., Iannino, V.: "*Fuzzy Adaptive Genetic Algorithm for Improving the Solution of Industrial Optimization Problems*" in Journal of Intelligent Systems, .
12. Galli, F., Vannucci, M., Colla, V.: "*Optimization of data resampling through GA for the classification of imbalanced datasets*" in International Journal of Advances in Intelligent Informatics, .
13. Vannocci, M., Ritacco, A., Castellano, A., Galli, F., Vannucci, M., Iannino, V., Colla, V.: "*Flatness Defect Detection and Classification in Hot Rolled Steel Strips Using Convolutional Neural Networks*" in Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), .
14. Vannucci, M., Colla, V.: "*Quality improvement through the preventive detection of potentially defective products in the automotive industry by means of advanced artificial intelligence techniques*" in Smart Innovation, Systems and Technologies, .
15. Vannucci, M., Colla, V.: "*Imbalanced datasets resampling through self organizing maps and genetic algorithms*" in Communications in Computer and Information Science, .
16. Vannucci, M., Colla, V.: "*Self-Organizing-Maps Based Undersampling for the Classification of Unbalanced Datasets*" in Proceedings of the International Joint Conference on Neural Networks, .
17. Iannino, V., Vannocci, M., Vannucci, M., Colla, V., Neuer, M.: "*A multi-agent approach for the self-optimization of steel production*" in International Journal of Simulation: Systems, Science and Technology, .
18. Cateni, S., Ritacco, A., Iannino, V., Colla, V., Vannucci, M., Dettori, S.: "*Smart data pre-processing modules and graphical user interfaces for machine learning tasks*" in International Journal of Simulation: Systems, Science and Technology, .
19. Colla, V., Valentini, R., Vannucci, M.: "*A Model for Predicting Residual Hydrogen Content in Blooms and Billets Stacked in Large Industrial Piles*" in Steel Research International, .
20. Van Den Berg, F.D., Kok, P.J.J., Yang, H., Aarnts, M.P., Meilland, P., Kebe, T., Stolzenberg, M., Krix, D., Zhu, W., Peyton, A.J., Martinez-De-Guerenu, A., Gutierrez, I., Jorge-Badiola, D., Malmström, M., Volker, A., Duijster, A., Wirdelius, H., Boström, A., Mocci, C., Vannucci, M., Colla, V., Davis, C., Zhou, L., Schmidt, R., Labbé, S., Reboud, C., Skarlatos, A., Leconte, V., Lombard, P.: "*Product uniformity control - A research collaboration of european steel industries to non-destructive evaluation of microstructure and mechanical properties*" in Studies in Applied Electromagnetics and Mechanics, .
21. Mocci, C., Maddaloni, A., Vannucci, M., Cateni, S., Colla, V.: "*A dive into the specific electric energy consumption in steelworks*" in Advances in Intelligent Systems and Computing, .

22. Vannucci, M., Colla, V.: "*Genetic algorithms based resampling for the classification of unbalanced datasets*" in Smart Innovation, Systems and Technologies, .
23. Vannucci, M., Colla, V., Cateni, S.: "*Learners reliability estimated through neural networks applied to build a novel hybrid ensemble method*" in Neural Processing Letters, .
24. Cateni, S., Colla, V., Vannucci, M.: "*A Fuzzy System for Combining Filter Features Selection Methods*" in International Journal of Fuzzy Systems, .
25. Vannucci, M., Colla, V.: "*Advanced neural networks systems for unbalanced industrial datasets*" in Smart Innovation, Systems and Technologies, .
26. Vannucci, M., Colla, V., Iannino, V.: "*Artificial neural networks based approaches for the prediction of mean flow stress in hot rolling of steel*" in Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), .
27. Dimatteo, A., Vannucci, M., Colla, V.: "*A Finite Element Method for the Prediction of Thermal, Metallurgical, and Mechanical Behavior of Rebars in the TempCore Process*" in Steel Research International, .
28. Vannucci, M., Colla, V., Dettori, S.: "*Fuzzy Adaptive Genetic Algorithm for Improving the Solution of Industrial Optimization Problems*" in IFAC-PapersOnLine, .
29. Vannucci, M., Colla, V.: "*Classification of unbalanced datasets and detection of rare events in industry: Issues and solutions*" in Communications in Computer and Information Science, .
30. Colla, V., Vannucci, M., Reyneri, L.M.: "*Neuro-fuzzy techniques and industry: Acceptability, advantages and perspectives*" in Smart Innovation, Systems and Technologies, .
31. Vannucci, M., Colla, V.: "*Smart under-sampling for the detection of rare patterns in unbalanced datasets*" in Smart Innovation, Systems and Technologies, .
32. Porzio, G.F., Colla, V., Fornai, B., Vannucci, M., Larsson, M., Stripple, H.: "*Process integration analysis and some economic-environmental implications for an innovative environmentally friendly recovery and pre-treatment of steel scrap*" in Applied Energy, .
33. Vannucci, M., Colla, V.: "*Artificial intelligence based techniques for rare patterns detection in the industrial field*" in Smart Innovation, Systems and Technologies, .
34. Vannucci, M., Colla, V., Cateni, S.: "*An hybrid ensemble method based on data clustering and weak learners reliabilities estimated through neural networks*" in Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), .
35. Vannucci, M., Colla, V.: "*Fuzzy adaptation of crossover and mutation rates in genetic algorithms based on population performance*" in Journal of Intelligent and Fuzzy Systems, .
36. Porzio, G.F., Colla, V., Matarese, N., Nastasi, G., Branca, T.A., Amato, A., Fornai, B., Vannucci, M., Bergamasco, M.: "*Process integration in energy and carbon intensive industries: An example of exploitation of optimization techniques and decision support*" in Applied Thermal Engineering, .
37. Porzio, G.F., Nastasi, G., Colla, V., Vannucci, M., Branca, T.A.: "*Comparison of multi-objective optimization techniques applied to off-gas management within an integrated steelwork*" in Applied Energy, .
38. Cateni, S., Colla, V., Vannucci, M.: "*A method for resampling imbalanced datasets in binary classification tasks for real-world problems*" in Neurocomputing, .
39. Dimatteo, A., Vannucci, M., Colla, V.: "*Prediction of mean flow stress during hot strip rolling using genetic algorithms*" in ISIJ International, .
40. Cateni, S., Colla, V., Vannucci, M.: "*A hybrid feature selection method for classification purposes*"

in Proceedings - UKSim-AMSS 8th European Modelling Symposium on Computer Modelling and Simulation, EMS 2014, .

41. Colla, V., Vannucci, M., Reyneri, L.M.: "*Artificial neural networks applied for estimating a probability density function*" in Intelligent Data Analysis, .

42. Porzio, G.F., Colla, V., Fornai, B., Vannucci, M., Larsson, M., Stripple, H.: "*Process integration analysis for innovative environmentally friendly recovery and pre-treatment of steel scrap*" in Chemical Engineering Transactions, .

43. Cateni, S., Colla, V., Vannucci, M., Vannocci, M.: "*A procedure for building reduced reliable training datasets from real-world data*" in Proceedings of the IASTED International Conference on Artificial Intelligence and Applications, AIA 2014, .

44. Matarese, N., Colla, V., Vannucci, M., Reyneri, L.M.: "*A procedure for the detection of anomalous input-output patterns*" in Intelligent Data Analysis, .

45. Dimatteo, A., Vannucci, M., Colla, V.: "*Prediction of hot deformation resistance during processing of microalloyed steels in plate rolling process*" in International Journal of Advanced Manufacturing Technology, .

46. Fornai, B., Vannucci, M., Colla, V., Amato, A., Porzio, G.F., Bjork, A., Westling, K.: "*A software tool for comparing the economic value of different scrap mixes in steel production*" in Proceedings - International Conference on Intelligent Systems, Modelling and Simulation, ISMS, .

47. Cateni, S., Vannucci, M., Colla, V.: "*Industrial multiple criteria decision making problems handled by means of fuzzy inference-based decision support systems*" in Proceedings - International Conference on Intelligent Systems, Modelling and Simulation, ISMS, .

48. Cateni, S., Colla, V., Vannucci, M., Vannocci, M.: "*Prediction of steel hardenability and related reliability through neural networks*" in IASTED Multiconferences - Proceedings of the IASTED International Conference on Artificial Intelligence and Applications, AIA 2013, .

49. Colla, V., Nastasi, G., Cateni, S., Vannucci, M., Vannocci, M.: "*Genetic algorithms applied to discrete distribution fitting*" in Proceedings - UKSim-AMSS 7th European Modelling Symposium on Computer Modelling and Simulation, EMS 2013, .

50. Porzio, G.F., Colla, V., Matarese, N., Nastasi, G., Branca, T.A., Amato, A., Fornai, B., Vannucci, M., Bergamasco, M.: "*Process integration in energy and carbon intensive industries through exploitation of optimization techniques and decision support*" in Chemical Engineering Transactions, .

51. Kappes, M., Porzio, G.F., Colla, V., Vannucci, M., Krumm, W.: "*Steam gasification process of chlorine-rich shredder granules: Experiments and flow-sheeting modelling for process evaluation and scale-up*" in Chemical Engineering Transactions, .

52. Vannucci, M., Colla, V., Dimatteo, A.: "*Improving the estimation of mean flow stress within hot rolling of steel by means of different artificial intelligence techniques*" in IFAC Proceedings Volumes (IFAC-PapersOnline), .

53. Porzio, G.F., Fornai, B., Amato, A., Matarese, N., Vannucci, M., Chiappelli, L., Colla, V.: "*Reducing the energy consumption and CO2 emissions of energy intensive industries through decision support systems - An example of application to the steel industry*" in Applied Energy, .

54. Colla, V., Vannucci, M., Dimatteo, A.: "*A neural networks-based model relating properties of the as cast-semi and rolling parameters with rolled product properties for plate rolled pipeline steels*" in Revue de Metallurgie. Cahiers D'Informations Techniques, .

55. Vannucci, M., Colla, V., Porzio, G.F.: "*Optimization of complex time consuming models of steel plants by means of AI techniques*" in IFAC Proceedings Volumes (IFAC-PapersOnline), .

56. Vannucci, M., Porzio, G.F., Fornai, B., Colla, V., Vannocci, M.: "*Efficient approximation of

time consuming models for their use in optimization frameworks" in International Journal of Simulation: Systems, Science and Technology, .

57. Vannucci, M., Colla, V., Vannocci, M., Nastasi, G.: *"An ensemble classification method based on input clustering and classifiers expected reliability"* in Proceedings - UKSim-AMSS 6th European Modelling Symposium, EMS 2012, .

58. Vannucci, M., Colla, V., Vannocci, M., Reyneri, L.M.: *"Dynamic resampling method for classification of sensitive problems and uneven datasets"* in Communications in Computer and Information Science, .

59. Vannucci, M., Colla, V., Cateni, S., Sgarbi, M.: *"Artificial intelligence techniques for unbalanced datasets in real world classification tasks"* in Computational Modeling and Simulation of Intellect: Current State and Future Perspectives, .

60. Cateni, S., Colla, V., Vannucci, M.: *"Novel resampling method for the classification of imbalanced datasets for industrial and other real-world problems"* in International Conference on Intelligent Systems Design and Applications, ISDA, .

61. Vannucci, M., Porzio, G.F., Colla, V., Fornai, B.: *"Use of clustering and interpolation techniques for the time-efficient simulation of complex models within optimization tasks"* in Proceedings - UKSim 5th European Modelling Symposium on Computer Modelling and Simulation, EMS 2011,
.

62. Borselli, A., Colla, V., Vannucci, M.: *"Surface defects classification in steel products: A comparison between different artificial intelligence-based approaches"* in Proceedings of the 11th IASTED International Conference on Artificial Intelligence and Applications, AIA 2011, .

63. Colla, V., Vannucci, M., Matarese, N., Stephens, G., Pianezzola, M., Alonso, I., Lamp, T., Palacios, J., Schiewe, S.: *"Detection of transients in steel casting through standard and AI-based techniques"* in Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), .

64. Reyneri, L., Colla, V., Vannucci, M.: *"Estimate of a probability density function through neural networks"* in Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), .

65. Cateni, S., Colla, V., Vannucci, M.: *"A genetic algorithm-based approach for selecting input variables and setting relevant network parameters of a SOM-based classifier"* in International Journal of Simulation: Systems, Science and Technology, .

66. Vannucci, M., Colla, V.: *"Novel classification method for sensitive problems and uneven datasets based on neural networks and fuzzy logic"* in Applied Soft Computing Journal, .

67. Cateni, S., Colla, V., Vannucci, M.: *"A genetic algorithms-based approach for selecting the most relevant input variables in classification tasks"* in Proceedings - UKSim 4th European Modelling Symposium on Computer Modelling and Simulation, EMS2010, .

68. Borselli, A., Colla, V., Vannucci, M., Veroli, M.: *"A fuzzy inference system applied to defect detection in flat steel production"* in 2010 IEEE World Congress on Computational Intelligence, WCCI 2010, .

69. Vannucci, M., Colla, V., Nastasi, G., Matarese, N.: *"Detection of rare events within industrial datasets by means of data resampling and specific algorithms"* in International Journal of Simulation: Systems, Science and Technology, .

70. Vannucci, M., Colla, V., Corbo, G., Fera, S.: *"A simplified approach to the simulation of direct reduction of iron ore"* in Revue de Metallurgie. Cahiers D'Informations Techniques, .

71. Cateni, S., Colla, V., Vannucci, M.: *"Variable selection through genetic algorithms for classification purposes"* in Proceedings of the 10th IASTED International Conference on Artificial Intelligence

and Applications, AIA 2010, .

72. Colla, V., Vannucci, M., Valentini, R.: "*Neural network based prediction of roughing and finishing times in a hot strip mill*" in Revista de Metalurgia (Madrid), .

73. Colla, V., Vannucci, M., Dimatteo, A.: "*Diagnosis of the instability of the cooling behaviour of flat steel products through parametric characterisation, neural networks and statistics*" in ISA Transactions, .

74. Vannucci, M., Colla, V., Nastasi, G., Matarese, N.: "*Data resampling techniques and specific algorithms applied to a critical industrial classification problem*" in EMS 2009 - UKSim 3rd European Modelling Symposium on Computer Modelling and Simulation, .

75. Cateni, S., Colla, V., Vannucci, M.: "*General purpose input variables extraction: A genetic algorithm based procedure GIVE a GAP*" in ISDA 2009 - 9th International Conference on Intelligent Systems Design and Applications, .

76. Cateni, S., Colla, V., Vannucci, M.: "*A fuzzy system for combining different outliers detection methods*" in Proceedings of the IASTED International Conference on Artificial Intelligence and Applications, AIA 2009, .

77. Vannucci, M., Colla, V., Sgarbi, M., Toscanelli, O.: "*Thresholded neural networks for sensitive industrial classification tasks*" in Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), .

78. Reyneri, L.M., Colla, V., Sgarbi, M., Vannucci, M.: "*Self-estimation of data and approximation reliability through neural networks*" in Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), .

79. Vannucci, M., Colla, V., Bendinelli, L., Colombini, M., Massei, R., Chilli, S.: "*Three little pigs discovering materials : A software for the sensitization of primary school students to environmental themes*" in CSEDU 2009 - Proceedings of the 1st International Conference on Computer Supported Education, .

80. Vannucci, M., Colla, V., Haines, N.: "*Air Dispersion modeling for the assessment of ULCOS technologies*" in Revue de Metallurgie. Cahiers D'Informations Techniques, .

81. Branca, T.-A., Vannucci, M., Colla, V.: "*A KPI for Local community impact of the ULCOS technologies*" in Revue de Metallurgie. Cahiers D'Informations Techniques, .

82. Colla, V., Bioli, G., Vannucci, M.: "*Model parameters optimisation for an industrial application: A comparison between traditional approaches and genetic algorithms*" in Proceedings - EMS 2008, European Modelling Symposium, 2nd UKSim European Symposium on Computer Modelling and Simulation, .

83. Cateni, S., Colla, V., Vannucci, M.: "*A fuzzy logic-based method for outliers detection*" in Proceedings of the IASTED International Conference on Artificial Intelligence and Applications, AIA 2007, .

84. Vannucci, M., Colla, V.: "*A novel classification method for predicting the casting behaviour in the steelmaking practice*" in Proceedings of the IASTED International Conference on Artificial Intelligence and Applications, AIA 2006, .

85. Vannucci, M., Colla, V., Valentini, R.: "*The BS-method: An algorithm for solving optimization problems*" in Proceedings of the IASTED International Conference. Applied Informatics, .

86. Valentini, R., Colla, V., Vannucci, M.: "*Neural predictor of the end point in a converter*" in Revista de Metalurgia (Madrid), .

87. Vannucci, M., Colla, V., Bioli, G., Valentini, R.: "*Two industrial problems solved through a novel optimization algorithm*" in Lecture Notes in Artificial Intelligence (Subseries of Lecture Notes in Computer Science), .

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The information provided in this document correspond to the truth in the framework of Art.46 and ss. of D.P.R. 445/2000 I authorise to process and analyse these data in the framework of Law 675/96 on personal data protection.

Pisa, January 19, 2022

Signature

F.to Marco Vannucci