

FRANCESCO DI MAIO
Ph.D., Ph.D., M.Sc., B.Sc., B.Mus.

Born on March 17th, 1982, Italian Nationality

Permanent Address: Piazza della Trivulziana 6, 20126, Milano, Italia

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Academic Position:

March 2019 – Present	Associate Professor <i>Politecnico di Milano, Energy Department, Nuclear Division</i>
September 2018 – Present	Adjunct Professor , “Metodi di Analisi di Vulnerabilità, Rischio e Resilienza” (6 ECTS), BSc in Civil Engineering for Risk Mitigation, Politecnico di Milano.
September 2018 – Present	Adjunct Professor , “Artificial Intelligence and Advanced Simulation for the Safety, Reliability and Maintenance of Energy Systems” (10 ECTS), MSc in Nuclear Engineering, Politecnico di Milano.
October 2016– August 2018	Adjunct Professor , “Integrated Deterministic and Probabilistic Safety Analysis of Nuclear Power Plants” (5 ECTS), MSc in Nuclear Engineering, Politecnico di Milano.
December 2014 – Present	Scientific Qualification as Full Professor (09/C2)
February 2014 – Present	Scientific Qualification as Associate Professor (09/C2)
September 2012– Present	Lecturer , “Nuclear Thermohydraulics” (2 ECTS) at the Master in Nuclear Energy (in English) run by Université Paris-Sud 11, ParisTech, Supélec, École Centrale Paris, INSTN, EDF, AREVA, GDF SUEZ, France.
December 2011 – February 2019	Assistant Professor <i>Tenure track and permanent staff researcher</i> <i>Politecnico di Milano, Energy Department, Nuclear Division</i>

Work Experience:

January 2019 – Present	Partner of ARAMIS TECHEXPO S.r.l
June 2017 – Present	Responsible for student mobility in Nuclear Engineering Politecnico di Milano
November 2016 – Present	Technical Peer reviewer for the Innovative Nuclear Research (INR) Integration Office of the Department of Energy (DOE) Office of Nuclear Energy, USA . Responsibility: managing competitive reviews to support activities and selection
February 2016 – Present	Co-CHAIR of Technical Committee on Nuclear Industry of the European Safety and Reliability Association (ESRA)
November 2014 – Present	Partner of Advanced Reliability, Availability and Maintainability of Industries and Services, ARAMIS S.r.l.

- September 2014 – Present **Board Member** of Advanced Reliability, Availability and Maintainability of Industries and Services, **ARAMIS S.r.l.**
- November 2014 – Present **Member of the Didactic Advisory Committee** of the Department of Energy, Politecnico di Milano
- July 2012 – Present **Member of the PhD Faculty Committee**
PhD Course in “Energy and Nuclear Science and Technology”
Politecnico di Milano
- February 2011 – Present **CHAIR of the IEEE Reliability Chapter** (Italy Section)
- March 2012 **Lecturer**
“Simulación y Redes Neuronales” at the Master Universitario en Ingeniería de Análisis de Datos, Mejora de Procesos y Toma de Decisiones (in Spanish) of the Universidad Politecnica de Valencia, Spain.
- April 2011 – November 2011 **Research Associate**
Politecnico di Milano, Energy Department, Nuclear Division
Research topic: Failure diagnostics and prognostics of nuclear power plants sensors and components
- April 2009 – March 2011 **Science and Technology Fellow (STF) in China**
European Commission Research Programme in China
EuropeAid/127024/L/ACT/CN
Tsinghua University, Beijing, China
Research topic: Risk and Safety Analysis of Nuclear Power Plants, Passive Safety Systems reliability analysis, Diagnostics and Prognostics of Nuclear Components
- May/November 2010 **Research Staff Member**
CityU PHM Centre for Prognostics and System Health Management
City University of Hong Kong – Hong Kong
Research topic: Diagnostics and prognostics of industrial equipments and components (sand oil pumps, rotating bearings)
- September 2009 – December 2011 **Co-Founder and Co-Administrator** of the Italy-China Science and Technology Web Portal www.italychinasciencetechnology.com in collaboration with *Italian Embassy in Beijing – Scientific and Technological Office*

Contracts

November 2018 -
Investigator for the research project “Development of a novel methodological framework for risk assessment in Oil & Gas industry”, ENI and Politecnico di Milano (12 months).

March 2017 – June 2017
Investigator for the research project “An Adaptive Unsupervised Fault Detection Approach for ICT servers failure-on-demand”, Aramis Srl and Politecnico di Milano (3 months), Fair Dynamics (Italy), Commitment.

January 2017 – December 2018
Investigator for the transnational, collaborative research project “Sensor development, intelligent data logging, mining and analysis, model updating and statistical methods to predict the performance of aging

infrastructures”, SAFERA 2016, funded by INAIL within the European Union’s Seventh Framework Programme (grant agreement no 291812)

December 2016 – March 2018

Investigator for research project “Development of methods for the analysis of long term, high dimensional data and their use for detection of abnormal patterns in systems, structures and components of electricity production plants”. Co-operation contract no. 8610-APP-5910083738 between Électricité de France (EDF) - R&D and Politecnico di Milano (22 months)

July 2016

Investigator for the research project “Development of cluster analysis algorithms for analyzing patient trial outcomes”, Aramis Srl and Politecnico di Milano (3 months), Fair Dynamics (Italy), Commitment.

March 2016 – December 2016

Investigator for the research project “Development of Prognostic Algorithms for Inductor Sealing of A3, within PMC activities”, Aramis Srl and Politecnico di Milano (3 months), Tetrapak (Italy), Commitment.

March 2016 – December 2016

Project team member of the “Evaluation of the management and impacts of fusion and fission research supported by the Euratom Research and Training Programme 2014-2018 and previous Euratom Programmes”, contracted by Fondazione Politecnico, Ernst&Young Commitment for the Directorate-General for Research&Innovation of the European Commission.

May 2015 – July 2015

Investigator for the research project “Elaboration of a Maturity Assessment Framework of Data Driven Methods in Railway Industry”, Aramis Srl and Politecnico di Milano (3 months), Alstom (Paris) Commitment.

January 2015 – December 2016

Investigator for the research project “Methods and software for probabilistic casing design: development, training and dissemination” Co-operation contract between Petrobras (Brazil) and Politecnico di Milano (24 months)

October 2013 – September 2015

Investigator for the research project “Processing condition monitoring data for diagnosis and prognosis of components in a fleet of electricity production plants” Co-operation contract no. 8610-APP-5910083738 between Électricité de France (EDF) - R&D and Politecnico di Milano (24 months)

October 2013-January 2014

Investigator for the research project “Signal Validation and Reconstruction for Fault Diagnosis”, Aramis Srl and Politecnico di Milano (4 months), General Electric (GE) Commitment.

March 2013 – July 2013

Investigator for the research project “Feasibility study for incomplete data usage for Condition Based Maintenance (CBM)”, Aramis Srl and Politecnico di Milano (2 months), General Electric (GE) Commitment.

June 2012 – November 2014

Investigator for the research project “Electrical powertrain Health Monitoring for Increased Safety of FEVs”, FP7 European Project, Project reference: FP7-ICT-314609.

January 2011 – April 2013

Investigator for the research project “Processing condition monitoring data for diagnosis and prognosis of components of electricity production plants” Co-operation contract no. 5910083738 between Électricité de France (EDF) - R&D and Politecnico di Milano (30 months)

May/November 2010

Principal Investigator of the research project “Diagnostics and prognostics of industrial equipments and components” at City University of Hong Kong

April 2009 – March 2011

Principal Investigator of the research project “Computational methods for safety and risk analysis of Nuclear Power Plants”, Co-operation contract no. EuropeAid/127024/L/ACT/CN between Tsinghua University (China) and Politecnico di Milano (Italy), (24 months)

Education:

December 2014

Italian Professorship Qualification for Full Professor

February 2014

Italian Professorship Qualification for Associate Professor

2007 – 21 February 2011

Double Ph.D. - Radiation Science and Technology

Politecnico di Milano, Milano, Italia

Tsinghua University, Beijing, China

Title of the thesis: “Computational Methods and Soft Computing Models for Reliability, Availability, Maintainability and Safety Analysis of Nuclear Systems”

Research topic: Probabilistic Safety Margins quantification, Dynamic Reliability of Digital Instrumentation and Control Systems, Diagnostics and Prognostics of Nuclear Power Plants Safety Systems.

Score: Graduated with Honors

February 2007

Engineering Professional Board Examination (Italy)

23 October 2006

MSc in Nuclear Engineering

Politecnico di Milano, Milano, Italia

Title of the thesis: “Applications of Soft Computing Methods to nuclear safety: 1. Neural Networks sensitivity analysis; 2. Neural Networks and Genetic Algorithms hybridization for reliability optimization”

Research topic: Sensitivity Analysis, Reliability Allocation

Score: 110 cum laude /110

14 October 2004

B.Mus. in Clarinet

Istituto Musicale Puccini - Gallarate, Varese, Italy

Score: 8 /10

September 2001- July 2004

BSc in Energy Engineering

Politecnico di Milano, Milano, Italia

Score: 110 cum laude /110

September 1996 - June 2001

High School Degree

Liceo Scientifico “G. Peano”, Cinisello Balsamo, Milano, Italia

Score: 100/100

Awards:

22 December 2017

Best presentation award

2nd International Conference on System Reliability and Science (ICSRS 2017)

Milan (Italy), December 20-22, 2017.

January 2013

Best Young Researcher Award

Department of Energy, Politecnico di Milano, Milano, Italia

Winner of the award granted by the Department of Energy of the Politecnico di Milano to the most productive young researcher of 2012.

MSc Thesis Award “Renato Briano”

Politecnico di Milano, Milano, Italia

Best MSc Thesis in Applications of Soft Computing Methods to nuclear safety

July 2006 – October 2006

Visiting in Valencia (Spain) – ERASMUS thesis

Winner of a ERASMUS-thesis scholarship of the Polytechnic of Milan for abroad research project with “Universitat Politecnica de Valencia”. Research topic: Soft computing methods for reliability optimization

November 2006

Winner of a **Scientific Research Fellowship** for a three-year doctorate in Radiation Science and Technology financed by the **Engineering Professional Board of Milan** (Ordine degli Ingegneri di Milano).

Publications:

Editorials

2015

1. F. Di Maio, E. Zio, C. Smith, V. Rychkov, “*Integrated Deterministic and Probabilistic Safety Analysis for Safety Assessment of Nuclear Power Plants*, Article ID 136940, 2 pages, Science and Technology of Nuclear Installations (STNI), Special Issue on IDPSA (open access), 2015.

2014

2. P. Baraldi, F. Di Maio, E. Zio, “*Guest Editorial*”, International Journal of Performability Engineering, Special Issue on PHM 2013 Conference Vol. 10, No. 5, July 2014, pp. 440-442.

International Journals

2019

1. F. Di Maio, F. Mascari, all chapter 3 contributors “WGAMA report”
2. E. Cervi, A. Cammi, F. Di Maio, X. Lu, E. Zio, “*Sensitivity Analysis...*”
3. Y. Hu, P. Baraldi, F. Di Maio, E. Zio, “*Fault Diagnostics in an Evolving Environment by COMPACTed Object Sample Extraction (COMPOSE) algorithm*”, rejected, IEEE Transactions on Neural Networks and Learning Systems.
4. R. Bellaera, R. Bonifetto, F. Di Maio, V. Destino, N. Pedroni, L. Savoldi, R. Zanino, E. Zio, “*A Spectral Clustering approach for an Integrated Deterministic and Probabilistic Safety Assessment of XXX – realistic case study*”.
5. J. Rizzo Cascio, F. Di Maio, E. Zio, F. Rinaldi, B. Najafi, L. Montini, S. Ritondale, A. Bianco, “*A multi-objective optimization embedding an exergy model of a hydrocarbon production system management*”, *Applied Energy*
6. R. Bellaera, R. Bonifetto, F. Di Maio, N. Pedroni, L. Savoldi, R. Zanino, E. Zio, “*Integrated Deterministic and Probabilistic Safety Assessment of a Superconducting Magnet Cryogenic Cooling Circuit for Nuclear Fusion Applications*”, submitted (01 february 2019), RESS.
7. W. Wang, F. Di Maio, E. Zio, “*Diagnostics of cyber security attacks considering the human operator cognitive process*”, submitted (25 January, 2019), RESS
8. F. Di Maio, R. Mascherona, E. Zio, “*Quantitative Risk Analysis by GTST-MLD of Cyber-Physical Systems considering cyber threats*” , submitted (17 december, 2018), IEEE Systems Journal
9. S. M. Hoseyni, F. Di Maio, E. Zio, “*Condition-based probabilistic safety assessment for maintenance decision making regarding a nuclear power plant steam generator undergoing multiple degradation mechanisms*”, under review (04 September, 2018), Reliability Engineering and System Safety.
10. W. Wang, F. Di Maio, E. Zio, “*Adversarial Risk Analysis to Allocate Optimal Defense Resources for Protecting Nuclear Power Plants from Cyber Attacks*”, submitted (22 May, 2018), Risk Analysis

11. J. Deng, D. Tian, E. Zio, F. Di Maio, F. Liao, “*Failure Modes Detection of Nuclear Systems using Gaussian Mixture-based Classifiers and Neural Networks*”, submitted (26 December, 2017), *Advanced Engineering Informatics*.

2018

12. M. Compare, P. Baraldi, F. Cannarile, F. Di Maio, E. Zio, “*Homogeneous continuous-time, finite-state, hidden semi-Markov modelling for enhancing empirical classification system diagnostics of industrial components*”, *Machines*, 2018, 6, 34; pp. 1-18, doi:10.3390/machines6030034.
13. F. Khayatian, M. MeshkinKiya, P. Baraldi, F. Di Maio, E. Zio, “*Hybrid Probabilistic-Possibilistic Treatment of Uncertainty in Building Energy Models: A Case Study of Sizing Peak Cooling Loads*”, *ASME J. Risk Uncertainty Part B*, 4(4), 041008, doi: 10.1115/1.4039784.
14. W. Wang, A. Cammi, F. Di Maio, S. Lorenzi, E. Zio, “*A Monte Carlo-based exploration framework for identifying components vulnerable to cyber threats in nuclear power plant*”, *Reliability Engineering and System Safety*, 175, pp. 24–37, 2018.
15. S. Al-Dahidi, F. Di Maio, P. Baraldi, E. Zio, R. Seraoui, “*A framework for reconciliating data clusters from a fleet of nuclear power plants turbines for fault diagnosis*”, *Applied Soft Computing*, 69, pp. 213–231, 2018.
16. M. Vagnoli, F. Di Maio, E. Zio, “*Ensembles of climate change models for risk assessment of nuclear power plants*”, *Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability*, Vol. 232(2) 185–200, DOI: 10.1177/1748006X17734946, 2018.
17. F. Cannarile, M. Compare, F. Di Maio, E. Zio, “*Handling reliability big data: a similarity-based approach for clustering a large fleet of assets*”, *Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability*, Vol. 232(2), pp. 140–150, 2018.
18. W. Wang, F. Di Maio, E. Zio, “*Hybrid Fuzzy-PID Control of a Nuclear Cyber-Physical System Working Under Varying Environmental Conditions*”, *Nuclear Engineering and Design*, 331, pp. 54-67, 2018.
19. F. Di Maio, A. Bandini, M. Damato, E. Zio, “*A regional sensitivity analysis-based expert system for safety margins control*”, *Nuclear Engineering and Design*, 330, pp. 400-408, 2018.
20. F. Di Maio, F. Antonello, E. Zio, “*Condition-Based Probabilistic Safety Assessment of a Spontaneous Steam Generator Tube Rupture Accident Scenario*”, *Nuclear Engineering and Design*, 326, pp. 41–54, 2018.

2017

21. F. Di Maio, R. Rossetti, E. Zio, “*Post-processing of accidental scenarios by semi-supervised Self Organizing Maps*”, *Science and Technology of Nuclear Installations*, Volume 2017 (2017), Article ID 2709109, 14 pages, <https://doi.org/10.1155/2017/2709109>.
22. S. Al-Dahidi, F. Di Maio, P. Baraldi, E. Zio, “*A Locally Adaptive Ensemble Approach for Data-Driven Prognostics of Heterogeneous Fleets*”, *Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability*, Volume 231, Issue 4, Pages 350-363, 1 August 2017.
23. W. Wang, F. Di Maio, E. Zio, “*Three-Loop Monte Carlo Simulation Approach to Multi-State Physics Modeling for System Reliability Assessment*”, *Special Issue "Reliability and Performance of Multi-State Systems"*, *Reliability Engineering and System Safety*, Vol. 167, pp. 276–289, 2017.
24. Y. Zhao, F. Di Maio, E. Zio, C. Dong, Q. Zhang, “*Optimization of a dynamic uncertain causality graph for fault diagnosis in nuclear power plant*”, *Nuclear Science and Techniques*, doi:10.1007/s41365-017-0184-0, pp. 28: 34, March 2017.
25. P. Baraldi, F. Di Maio, S. Al-Dahidi, Enrico Zio, F. Mangili “*Prediction of Industrial Equipment Remaining Useful Life by Fuzzy Similarity and Belief Function Theory*”, *Expert Systems with Applications*, 83, pp. 226–241, 2017.
26. Z. Zeng, F. Di Maio, E. Zio, R. Kang, “*A hierarchical decision making framework for the assessment of the prediction capability of prognostic methods*”, *Journal of Risk and Reliability*, Vol 231, Issue 1, pp. 36 – 52, 2017.
27. F. Di Maio, S. Baronchelli, M. Vagnoli, E. Zio, “*Determination of Prime Implicants by Differential Evolution for the Dynamic Reliability Analysis of Non-Coherent Nuclear Components*”, *Annals of Nuclear Energy*, 102, pp. 91–105, 2017.

28. F. Di Maio, C. Picoco, E. Zio, V. Rychkov “*Dynamic Probabilistic Safety Margin sensitivity analysis for model selection in nuclear power plant probabilistic safety assessment*”, Reliability Engineering and System Safety, 162, pp. 122–138, 2017.
29. Y. Hu, P. Baraldi, F. Di Maio, E. Zio, “*A Systematic Semi-Supervised Self-adaptable Fault Diagnostics Approach in an Evolving Environment*”, Mechanical Systems and Signal Processing, Mechanical Systems and Signal Processing 88, pp. 413–427, 2017.

2016

30. Y. Hu, P. Baraldi, F. Di Maio, E. Zio, “*On-line Performance Assessment Method for a Model-Based Prognostic Approach*”, IEEE Transactions Reliability, Volume 65, Issue 2, June 2016, Article number 7361762, Pages 718-735.
31. M. Compare, F. Di Maio, E. Zio, F. Carlevalo, S. Mattafirri “*Improving scheduled maintenance by missing data reconstruction: a double-Loop Monte Carlo approach*”, Special Issue ESREL2014, Proceedings of the Institution of Mechanical Engineers, Part O, Journal of Risk and Reliability, 230, Issue 5, 2016.
32. S. Al-Dahidi, F. Di Maio, P. Baraldi, E. Zio, “*Remaining Useful Life Estimation in Heterogeneous Fleets Working Under Variable Operating Conditions*”, Reliability Engineering and System Safety 156, pp. 109–124, 2016.
33. P. Baraldi, F. Cannarile, F. Di Maio, E. Zio, “*Hierarchical k-nearest neighbours classification and binary differential evolution for fault diagnostics of automotive bearings operating under variable conditions*”, Engineering Applications of Artificial Intelligence, vol. 56, pp. 1–13, 2016.
34. W. Wang, F. Di Maio, E. Zio, “*Component- and System-level Degradation of Digital Instrumentation and control systems based on a Multi-State Physics Modelling approach*”, Annals of Nuclear Energy, vol. 95, pp.135–147, 2016.
35. F. Di Maio, A. Bandini, E. Zio, S. Carlos Alberola, F. Sanchez-Saez, S. Martorell, “*Bootstrapped Ensemble-based Sensitivity analysis of a TRACE thermal-hydraulic model based on a limited number of PWR large Break LOCA simulations*”, Reliability Engineering and System Safety Volume 153, pp. 122–134, 2016.
36. F. Di Maio, G. Nicola, E. Borgonovo, E. Zio, “*Invariant Methods for an ensemble-based Sensitivity Analysis of a Passive Containment Cooling System of an AP1000 Nuclear Power Plant*”, Reliability Engineering and System Safety, Volume 151, pp. 12–19, 2016.
37. F. Di Maio, A. Bandini, E. Zio, A. Alfonsi, C. Rabiti, “*An Approach Based on Support Vector Machines and a K-D Tree Search Algorithm for Identification of the Failure Domain and Safest Operating Conditions in Nuclear Systems*”, Progress in Nuclear Energy, Volume 88, pp. 297–309, 2016.
38. F. Di Maio, M., Vagnoli, E. Zio, “*Transient Identification by Clustering based on Integrated Deterministic and Probabilistic Safety Analysis Outcomes*”, Annals of Nuclear Energy, Volume 87, pp. 217–227, 2016.
39. F. Di Maio, A. Rai, E. Zio, “*A dynamic probabilistic safety margin characterization approach in support of Integrated Deterministic and Probabilistic Safety Analysis*”, Reliability Engineering and System Safety, Volume 145, pp. 9–18, 2016.

2015

40. M. Hoseyni, F. Di Maio, M. Vagnoli, E. Zio, M. Pourgol-Mohammad, “*A Bayesian ensemble of sensitivity measures for Severe Accident modeling*”, Nuclear Engineering and Design, Vol. 295, pp. 182–191, 2015.
41. F. Di Maio, M., Vagnoli, E. Zio, “*Risk-based clustering for near misses identification in integrated deterministic and probabilistic safety analysis*”, Article ID 693891, 29 pages, doi:10.1155/2015/693891, Science and Technology of Nuclear Installations (STNI), Special Issue on IDPSA (open access), 2015.
42. P. Baraldi, F. Di Maio, D. Genini, E. Zio, “*Comparison of data-driven reconstruction methods for fault detection*”, DOI 10.1109/TR.2015.2436384, IEEE Transactions on Reliability, Vol. 64 (3), pp. 852–860, 2015.
43. F. Di Maio, S. Baronchelli, E. Zio, “*A Visual Interactive Method for Prime Implicants Identification*”, IEEE Transactions on Reliability, 64, Issue 2, 539-549, 2015.
44. S. Al-Dahidi, F. Di Maio, P. Baraldi, E. Zio, R. Seraoui, “*A novel ensemble approach for clustering operational transients of a NPP turbine*”, International Journal of Prognostics and Health Management, Vol 6 (Special Issue Nuclear Energy PHM), ISSN 2153-2648, (open access), pages: 21, 2015.

45. F. Di Maio, G. Nicola, E. Zio, Y. Yu, “*Finite Mixture Models for sensitivity analysis of Thermal Hydraulic Codes for Passive Safety Systems safety Analysis*”, Nuclear Engineering and Design, 289, 144–154, 2015.
46. P. Baraldi, P. Turati, F. Di Maio, E. Zio, “*Robust signal reconstruction for condition monitoring of industrial components via a modified Auto Associative Kernel Regression method*”, Mechanical Systems and Signal Processing, 60–61, 29–44, 2015.
47. F. Di Maio, D. Colli, E. Zio, L. Tao, J. Tong, “*A Multi-State Physics Modeling Approach for the Reliability Assessment of Nuclear Power Plants Piping Systems*”, Annals of Nuclear Energy, 80, 151–165, 2015.
48. P. Baraldi, F. Di Maio, E. Zio, M. Rigamonti, R. Seraoui, “*Clustering for unsupervised fault diagnosis in nuclear turbine shut-down transients*”, Mechanical Systems and Signal Processing, Volumes 58–59, Pages 160–178, June 2015.
49. Y. Hu, P. Baraldi, F. Di Maio, E. Zio, “*A Particle Filtering and Kernel Smoothing-based Approach for New Design Component Prognostics*”, Reliability Engineering and System Safety, Vol. 134, 19–31, February 2015.
50. P. Baraldi, F. Di Maio, D. Genini, E. Zio, “*Reconstruction of missing data in multidimensional time series by fuzzy similarity*”, Applied Soft Computing, Vol. 26, 1–9, January 2015.
51. F. Di Maio, S. Baronchelli, E. Zio, “*A Computational framework for Prime Implicants Identification in non-coherent Dynamic Systems*”, Risk Analysis, Vol. 35, No. 1, 142–156, 2015.
52. P. Baraldi, F. Di Maio, E. Zio, M. Rigamonti, R. Seraoui, “*Unsupervised clustering of vibration signals for identifying anomalous conditions in a nuclear turbine*”, Journal of Intelligent and Fuzzy Systems (JIFS), 28, 1723–1731, DOI:10.3233/IFS-141459.
53. S. Al-Dahidi, F. Di Maio, P. Baraldi, E. Zio “*Ensemble Clustering for Fault Diagnosis in Industrial Plants*”, Chemical Engineering Transactions, Vol. 43, pp. 1225 - 1230.

2014

54. F. Di Maio, G. Nicola, E. Zio, Y. Yu, “*Ensemble-based sensitivity analysis of a best estimate thermal hydraulic model: application to a Passive Containment Cooling System of an AP1000 Nuclear Power Plant*”, Annals of Nuclear Energy, 73, 200–210, 2014.
55. S. Al-Dahidi, P. Baraldi, F. Di Maio, E. Zio, “*A novel fault detection system taking into account uncertainties in the reconstructed signals*”, Annals of Nuclear Energy, Volume 73, Pages 131–144, 2014.
56. F. Di Maio, S. Baronchelli, E. Zio, “*Hierarchical Differential Evolution for Minimal Cut Sets Identification: Application to Nuclear Safety Systems*”, European Journal of Operational Research, Volume 238, Issue 2, Pages 645–652, 2014.

2013

57. F. Di Maio, P. Baraldi, E. Zio, R. Seraoui, “*Fault Detection in Nuclear Power Plants Components by a Combination of Statistical Methods*”, IEEE Transactions on Reliability, 62 (4) , pp. 833–845, 2013.
58. P. Baraldi, F. Di Maio, F. Mangili, E. Zio, “*A Belief Function Theory Method for Prognostics in Clogging Filters*”, Chemical Engineering Transactions, 33, pp. 847–852, 2013.
59. P. Baraldi, F. Di Maio, E. Zio, D. Genini, “*A fuzzy similarity based method for signal reconstruction during plant transients*”, Chemical Engineering Transactions, 33, pp. 889–894, 2013.
60. P. Baraldi, F. Di Maio, M. Rigamonti, E. Zio, R. Seraoui, “*Transients Analysis of a Nuclear Power Plant Component for Fault Diagnosis*”, Chemical Engineering Transactions, 33, pp. 895–900, 2013.
61. P. Baraldi, F. Di Maio, E. Zio, “*Unsupervised Clustering for Fault Diagnosis in Nuclear Power Plant Components*”, International Journal of Computational Intelligence Systems, Vol. 6, No. 4, pp. 764–777, 2013.
62. F. Di Maio, E. Zio, “*Failure Prognostics by a Data-Driven Similarity Based Approach*”, International Journal of Reliability Quality and Safety Engineering, Vol 20 (2), No.1, pp.1–17, 2013.

2012

63. P. Baraldi, F. Di Maio, L. Pappaglione, E. Zio, R. Seraoui, “*Condition Monitoring of Electrical Power Plant Components During Operational Transients*”, Proceedings of the Institution of Mechanical Engineers, Part O, Journal of Risk and Reliability, 226(6) 568–583, 2012.

64. P. Baraldi, F. Di Maio, E. Zio, S. Saucio, E. Droguett, C. Magno, “*Sensitivity Analysis of the Scale Deposition on Equipment of Oil Wells Plants*”, Chemical Engineering Transactions, 26, pp. 327-332, 2012.
65. F. Di Maio, K. L. Tsui, E. Zio, “*Combining Relevance Vector Machines and Exponential Regression for Bearing RUL estimation*”, Mechanical Systems and Signal Processing, 31, 405–427, 2012.
66. E. Zio, F. Di Maio, “*Fatigue Crack Growth Estimation by Relevance Vector Machines*”, Expert Systems with Applications, Volume 39, pp. Volume 39, Issue 12, Pages 10681–10692, 2012.
67. E. Zio, F. Di Maio, “*Fault Diagnosis and Failure Mode Estimation by a Data-Driven Fuzzy Similarity Approach*”, International Journal of Performability Engineering, Vol. 8, No.1, pp. 49-66, 2012.

2011

68. F. Di Maio, J. Hu, P. Tse, K. Tsui, E. Zio, M. Pecht, “*Ensemble-approaches for clustering health status of oil sand pumps*”, Expert Systems with Applications, Volume 39, pp. 4847–4859, doi: 10.1016/j.eswa.2011.10.008.
69. F. Di Maio, P. Secchi, S. Vantini, E. Zio, “*Fuzzy C-Means Clustering of Signal Functional Principal Components for Post-Processing Dynamic Scenarios of a Nuclear Power Plant Digital Instrumentation and Control System*”, IEEE – Transactions on Reliability, Volume 60, Issue 2, June 2011, pages 415-425.

2010

70. E. Zio, F. Di Maio, J. Tong, “*Safety Margins Confidence Estimation for a Passive Residual Heat Removal System*”, Reliability Engineering and System Safety, RESS, Vol. 95, 2010, pp. 828–836, doi:10.1016/j.ress.2010.03.006, 2010.
71. E. Zio, F. Di Maio, “*A Fuzzy Similarity-Based Method for Failure Detection and Recovery Time Estimation*”, International Journal of Performability Engineering, Vol. 6, No. 5, 407-424, September 2010.
72. E. Zio, F. Di Maio, M. Stasi, “*A Data-driven Approach for Predicting Failure Scenarios in Nuclear Systems*”, Annals of Nuclear Energy, 37, 482–491, 2010.
73. E. Zio, F. Di Maio, “*A Data-Driven Fuzzy Approach for Predicting the Remaining Useful Life in Dynamic Failure Scenarios of a Nuclear System*”, Reliability Engineering and System Safety, RESS, Volume 95(1), Pages 49-57, 2010.

2009

74. E. Zio, F. Di Maio, “*Processing Dynamic Scenarios from a Reliability Analysis of a Nuclear Power Plant Digital Instrumentation and Control System*”, Annals of Nuclear Energy, Volume 36(9), Pages 1386-1399, doi:10.1016/j.anucene.2009.06.012, 2009.

2008

75. P. Secchi, E. Zio, F. Di Maio, “*Quantifying Uncertainties in the Estimation of Safety Parameters by Using Bootstrapped Artificial Neural Networks*”, Annals of Nuclear Energy, Volume 35(12), Pages 2338-2350, doi: 10.1016/j.anucene.2008.07.010, 2008.
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2019

1. F. Di Maio, M. Fumagalli, C. Guerini, F. Perotti, E. Zio., "A level-2 Condition-Based Probabilistic Safety Assessment", *PSAM15*
2. E. Tosoni, F. Di Maio, E. Zio, "Mining the most critical pathways to failure in nuclear waste repositories", *PSAM15*
3. F. Di Maio, P. Baraldi, A. Eslamian, E. Zio, C. Magno, "A Dynamic event tree for a blowout accident in an oil deep-water well equipped with a managed pressure drilling condition monitoring and operation system", *PSAM15*
4. F. Di Maio, R. Mascherona, W. Wang, E. Zio, "Simulation-based Goal Tree Success Tree Approach to the Risk Analysis of Cyber-Physical Systems", *ESREL2019*
5. F. Di Maio, F. Antonello, E. Zio, "Condition-Based Probabilistic Safety Assessment for an Induced Steam Generator Tube Rupture", 2019 International Topical Meeting on Probabilistic Safety Assessment and Analysis (PSA 2019), April 28-May 3, Charleston, SC, 2019.
6. F. Di Maio, A. Rai, E. Zio, "A Dynamic safety margins estimation with a limited number of PWR large Break LOCA simulations", 2019 International Topical Meeting on Probabilistic Safety Assessment and Analysis (PSA 2019), April 28-May 3, Charleston, SC, 2019.

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7. F. Di Maio, P. Baraldi, A. Eslamian, E. Zio, C. Magno, "A Dynamic event tree for a blowout accident in an oil deep-water well equipped with a managed pressure drilling condition monitoring and operation system", *ICVRAM ISUMA UNCERTAINTIES 2018 (3^o International Conference On Vulnerability And Risk Analysis And Management, 7^o International Symposium On Uncertainty Modelling And Analysis , 4^o International Symposium On Uncertainty Quantification And Stochastic Modeling)*, Florianópolis, Brazil, 8-11 April, 2018
8. Y. Yu, F. Di Maio, E. Zio, B. Wang, S. Wang, Z. Guo, X. Lyu, F. Niu, "Modeling the Effect of Air Temperature and Pressure on the Reliability of a Passive Containment Cooling System ", *Probabilistic Safety Assessment and Management PSAM 14*, Los Angeles, CA (USA), September 2018.
9. D. Tian, J. Deng, E. Zio, F. Di Maio, F. Liao, "Failure Modes Detection of Nuclear Systems Using Machine Learning", *The Fifth International Conference on Dependable Systems and Their Applications (DSA2018)*, September 2018, Dalian (China). DOI: 10.1109/DSA.2018.00017
10. R. Bellaera, R. Bonifetto, F. Di Maio, N. Pedroni, L. Savoldi, R. Zanino, E. Zio, "Integrated Deterministic and Probabilistic Safety Assessment of the Cooling Circuit of a Superconducting Magnet for Nuclear Fusion Applications", *Safety and Reliability - Safe Societies in a Changing World - Proceedings of the 28th International European Safety and Reliability Conference, ESREL 2018*, pp. 2161-2168, Trondheim, Norway, 17-21 June 2018

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12. W. Wang, F. Di Maio, P. Baraldi, E. Zio "A Hybrid Monte Carlo and Possibilistic Approach to Estimate Non-Suppression Probability in Fire Probabilistic Safety Analysis", *2nd International Conference on System Reliability and Science (ICSRS 2017)*, Milan (Italy), December 20-22, pages 552-559, 2017.
13. W. Wang, F. Di Maio, E. Zio, "Estimation of failure on-demand probability and malfunction rate values in cyber-physical systems of nuclear power plants", *International Topical Meeting on Probabilistic Safety Assessment and Analysis, PSA 2017*, Pittsburgh, USA September 24-28, 2017, Volume 2, Pages 1205-1211.
14. F. Di Maio, D. Colli, E. Zio, L. Tao, J. Tong, "Multi-State Physics Modeling for estimating the size- and location-dependent Loss of Coolant Accident initiating event probability", *International Topical Meeting on Probabilistic Safety Assessment and Analysis, PSA 2017*, Pittsburgh, USA September 24-28, 2017, Volume 2, Pages 1185-1192.
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21. Y. Hu, P. Baraldi, F. Di Maio, E. Zio “*A semi-supervised feature selection approach for fault diagnostics in evolving environments*”, European Prognostics and Health Management Conference, PHM2016, Bilbao, Spain, July 5-8, 2016.
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40. P. Baraldi, F. Di Maio, E. Zio, S. Al-Dahihi, “*Condition-Based Maintenance Modelling and Decision Making taking into account Uncertainties*”, GDRR 2013 - Third Symposium on Games and Decisions in Reliability and Risk, Kinsale, Ireland, 8-10 July 2013.

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57. E. Zio, F. Di Maio, S. Martorell, “*An hybridization of Genetic Algorithms and Artificial Neural Networks for RAMS + C Multiple Objective Optimization with preferences*”, proceedings of ESREL 2007 Conference, ISBN 9780415447843, Risk, Reliability and Societal Safety, Taylor & Francis Group, 2007, Vol.1, pp 419-426, Stavanger, Norway, 25-27 June 2007.

Proceedings of national (Italian) conferences

1. F. Di Maio, S. M. Hoseyni, E. Zio, “*Stima adattativa del rischio di rottura di componenti in pressione soggetti a creep con un approccio probabilistico*”, SAFAP 2018 - Sicurezza ed affidabilità delle attrezzature a pressione, 28-29 Novembre, Bologna
2. E. Zio, F. Di Maio, N. Berteletti, A. Carpignano, F. Ganci, “*Analisi delle incertezze nella modellazione di un impianto di distribuzione di idrogeno per autotrazione*”, proceedings of VGR 2008 Conference, Valutazione e Gestione del Rischio, Pisa, Ottobre 2008.

Contribution to national (Italian) journals

1. F. Di Maio, “*Cooperazione e strategia nella politica nucleare cinese*”, Mondo Cinese, Vol. 150, Novembre 2012, ISBN-13 9788895399836.
2. F. Di Maio, “*Fare ricerca tra Italia e Cina – Metodi computazionali per un approccio innovativo alla sicurezza degli impianti nucleari*”, Rivista dell’Ordine degli Ingegneri, Vol. 53, September 2011, p. 24-27.
3. F. Di Maio, “*Un approccio probabilistico alla definizione dei margini di sicurezza degli impianti*”

Books and Chapters

1. W. Wang., F. Di Maio, E. Zio, “*A non-parametric cumulative sum approach for online diagnostics of cyber attacks to nuclear power plants*”, Series: Advanced Sciences and Technologies for Security Applications, book title “*Resilience of Cyber-Physical Systems: From Risk Modeling to Threat Counteraction*”, Editor: Francesco Flammini, Springer, ISBN 978-3-319-95596-4, DOI 978-3-319-95597-1_9 2019.
2. F. Di Maio, E., Zio “*Dynamic accidental scenarios generation, modeling and post-processing for the integrated deterministic and probabilistic safety assessment of nuclear power plants*”, Advanced Concepts in Nuclear Energy Risk Assessment and Management, Editor: Tunc Aldemir, World Scientific Publishing, ISBN: 978-981-3225-60-2, 2018.

Tutorials:

- | | |
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| 7 September 2016 | P. Baraldi, F. Di Maio and E. Zio, “ <i>Modern Reliability and Maintenance Engineering for Modern Industry</i> ”, IEEE RTSI2016 (Research and Technologies for Society and Industry), Sept 7-9, 2016, Bologna (Italy). |
| 6 July 2016 | P. Baraldi, F. Di Maio and E. Zio, “ <i>Ensembles of Models for Prognostics and Health Management</i> ”, 3rd European Conference of the PHM Society – PHME16, July 5-8, 2016, Bilbao (Spain). |
| 8 July 2014 | P. Baraldi, F. Di Maio and E. Zio, “ <i>Particle filters for prognostics</i> ”, 2nd European Conference of the PHM Society - PHME14, July 8-10, 2014, Nantes (France). |
| 8 September 2013 | P. Baraldi, F. Di Maio, “ <i>Ensembles for PHM</i> ”, 4th International Conference on Prognostics and System Health Management, 8 September 2013, Milan (Italy) |

Conferences/Workshops:

- 30 November 2018 **Speaker at SAFAP 2018 - Sicurezza ed affidabilità delle attrezzature a pressione, 28-29 Novembre, Bologna, “Stima adattativa del rischio di rottura di**

componenti in pressione soggetti a creep con un approccio probabilistico”, F. Di Maio, S. M. Hoseyni, E. Zio.

- 22 December 2017 **Speaker at 2nd International Conference on System Reliability and Science (ICSRS 2017)**, Milan (Italy), December 20-22, 2017, “*A Benchmark of Dynamic Reliability Methods for Probabilistic Safety Assessment*”, X. Pan, F. Di Maio, E. Zio.
- 28 September 2017 **Speaker at International Topical Meeting on Probabilistic Safety Assessment and Analysis, PSA 2017**, Pittsburgh, USA September 24-28, 2017, “*Multi-State Physics Modeling for estimating the size- and location-dependent Loss of Coolant Accident initiating event probability*”, F. Di Maio, D. Colli, E. Zio, L. Tao, J. Tong,
- 25 September 2017 **Speaker at International Topical Meeting on Probabilistic Safety Assessment and Analysis, PSA 2017**, Pittsburgh, USA September 24-28, 2017, “*Local Fusion of an ensemble of Semi Supervised Self Organizing Maps for a Safety Analysis post-processing of accidental Scenarios*”, F. Di Maio, R. Rossetti, E. Zio.
- 26 June 2017 **Invited speaker at the Summer Seminar of the Seminar series on system reliability, risk and resilience**, Politecnico di Milano (organized by IEEE Reliability Society, European Safety and Reliability Society), “*Integrated Safety and Security Analysis for Cyber-Physical Systems*”, F. Di Maio
- 4 October 2016 **Speaker at PSAM13 Conference**, Probabilistic Safety Assessment Conference, 2-7 October 2016, Seoul (South Korea), “*A Semi-Supervised Self Organizing Map for Post-Processing the Scenarios of an Integrated Deterministic and Probabilistic Safety Analysis*”, F. Di Maio, R. Rossetti, E. Zio,
- 3 October 2016 **Speaker at PSAM13 Conference**, Probabilistic Safety Assessment Conference, 2-7 October 2016, Seoul (South Korea) “*A Repairable Dynamic Event Tree for the safety assessment of a steam generator of a nuclear power plant*”, F. Di Maio, C. Picoco, E. Zio.
- 24 October 2015 **Invited Lecture**, Institute of Nuclear Energy Safety Technology (INEST), Hefei (China), “*Advanced topics in Reliability and Safety Research for Nuclear Systems*”, E. Zio, F. Di Maio.
- 20 October 2015 **Invited Lecture**, Center for Resilience and Safety of “*Critical Infrastructures (CRESCI)*”, Beihang Universtiy, Beijing (China), “*RAMS&PHM in Oil&Gas Industry: Where we are, where we can go*”, E. Zio, F. Di Maio
- 8 September 2015 **Speaker at ESREL 2015**, European Safety and Reliability Conference, 7-10 September 2015, Zurich (Switzerland) - “*Evaluating the impact from of climate change on the risk assessment of nuclear power plants*” U. Sahlin, F. Di Maio, M. Vagnoli, E. Zio.
- Speaker at ESREL 2015**, European Safety and Reliability Conference, 7-10 September 2015, Zurich (Switzerland) - “*Handling reliability big data: a similarity-based approach for clustering a large fleet of assets*” F. Cannarile, M. Compare, F. Di Maio, E. Zio.
- 18 September 2014 **Speaker at ESREL 2014**, European Safety and Reliability Conference, 15-18 September 2014, *Wroclaw (Poland)* - “*Ensemble of Invariant Methods for*

- Sensitivity Analysis of a Passive Containment Cooling System of an AP1000 Nuclear Power Plant”, F. Di Maio, G. Nicola, E. Borgonovo, E. Zio.
- 26-27 May 2014 **Invited speaker** at the 1st Young Researcher Workshop “The Future of Reliability and Risk Analysis, organized by ESRA, European Safety and Reliability Association, Ragusa (*Italy*), 26-27 May 2014 – “Integrated Deterministic and Probabilistic Safety Assessment (IDPSA): The Future of Safety Assessment“, F. Di Maio.
- 23 September 2013 **Speaker at PSA2013**, the International Topical Meeting on Probabilistic Safety Assessment and Analysis, 22-27 September 2013, Columbia (*South Carolina, USA*) - “Minimal Cut Sets identification by Evolutionary Algorithms”, F. Di Maio, S. Baronchelli, E. Zio.
- 9 September 2013 **Speaker at PHM2013**, Prognostics and System Health Management Conference, 8-11 September 2013, *Milan (Italy)* - “A Fuzzy Similarity based method for signal reconstruction during plant transients”, P. Baraldi, F. Di Maio, D. Genini, E. Zio.
- 29 May 2013 **Invited lecture as IEEE RS Italy Chair at the Sustainability Summit within the “Electronics Day” organized by the Sustainable Electronics Manufacturing (SEM) working group, Milano, Italy**, “Reliability: yesterday, today and tomorrow”, F. Di Maio
- 20 November 2012 **Invited speaker at Integrated Deterministic and Probabilistic Safety Analysis (IDPSA) workshop, Royal Institute of Technology (KTH), Stockholm, Sweden**, “Needs and dreams for methodologies of Integrated Deterministic and Probabilistic Safety Analyses (IDPSA) ”, F. Di Maio, E. Zio
- 28 June 2012 **Speaker at PSAM11/ESREL 2012**, Joint Probabilistic Safety Assessment and Management Conference and European Safety and Reliability Conference, 25-29 June 2012, *Helsinki (Finland)* - “Ensemble of Neural Networks for Predicting Scale Deposition in Oil Well Plant Equipments”, P. Baraldi, F. Di Maio, E. Zio, S. Saucó, E. Droguett, C. Magno.
- Speaker at PSAM11/ESREL 2011**, Joint Probabilistic Safety Assessment and Management Conference and European Safety and Reliability Conference, 25-29 June 2012, *Helsinki (Finland)* - “A Wavelet-Based Approach for Condition Monitoring of a Gas Turbine During Start-Up Transients”, P. Baraldi, F. Di Maio, E. Zio, F. Di Maio, L. Pappaglione, R. Seraoui.
- 4 June 2012 **Speaker at CISAP5**, 5th International Conference on Safety & Environment in Process & Power Industry, 3-6 June 2012, *Milan (Italy)*- “Sensitivity Analysis of Scale Deposition on Equipment of Oil Wells Plants”, P. Baraldi, F. Di Maio, E. Zio, S. Saucó, E. Droguett, C. Magno.
- 27 October 2011 **Invited seminar: “Computational methods for a modern approach to safety and risk analysis of Nuclear Power Plants”**, “*L’Ordine degli Ingegneri a fianco dei giovani ricercatori*” *Fondazione Ordine Ingegneri–Milano*
- 18-22 September 2011 **Speaker at ESREL 2011**, European Safety and Reliability Conference, *Troyes (France)* - “Ensemble of Unsupervised Fuzzy C-Means Clustering Models for Classifying the Health Status of Oil Sand Pumps”, F. Di Maio, E. Zio, M. Pecht, P. Tse, K.L. Tsui.

- Speaker at ESREL 2011**, European Safety and Reliability Conference, *Troyes (France)* - “Differential Evolution for Optimal Grouping of Condition Monitoring Signals of Nuclear Components”, P. Baraldi, E. Zio, F. Di Maio, L. Pappagione, R. Chevalier, R. Seraoui.
- 21-23 March 2011 **EURATOM-CAEA (Chinese Atomic Energy Agency) workshop 2011**
Hosted by CAEA with the support of European Delegation in China
Schonbrunn Hotel, Beijing, China
- 17-18 March 2011 **Invited speaker at 1st STF CONFERENCE** (Science and Technology Fellowship Programme China – EU Founded Project), *Marriott Hotel, Beijing, China*, “Computational Methods for an annotative approach to Nuclear Power Plants Safety Analysis”, F. Di Maio
- 4 February 2011 **Invited speaker at 1st IMAPLA Workshop** (Integrated Maintenance Planning, PIRSES-GA-2008-230814 – EU Founded Project) *Hosted by Politecnico di Milano, Italy.* - “Prognostics & Health Management: Challenges and ways forward”, F. Di Maio, P. Baraldi, E. Zio
- 24-25 November 2010 **First STF - INET Joint Networking Event** (co-organizer)
Topic: “Energy and sustainable development: challenges and opportunities”,
Tsinghua University – INET Institute of Nuclear and New Energy Technologies, Beijing, China
- 23 November 2010 **Speaker at The Italian Contribution to the EU Science & Technology Fellowship Programme in China**, *Italian Embassy, Beijing, China* - “Computational methods for a modern approach to safety and risk analysis of Nuclear Power Plants”.
- 18 November 2010 **Invited seminar: “Computational methods for estimating nuclear power plants residual useful life”**, *City University of Hong Kong, China*
- 14-15 October 2010 **1st International Education Forum on Reliability and Systems Engineering (IEFR&SE)**, *Beihang University, Beijing, China*
- 26-28 September 2010 **First STF - SWU Joint Networking Event**
South West University (SWU), Chong Qing, China
- 5– 9 September 2010 **Speaker at ESREL 2010**, European Safety and Reliability Conference, *Rhodes (Greece)* - “Data-Driven On-Line Prediction of the Available Recovery Time in Nuclear Power Plant Failure Scenarios”, E. Zio, F. Di Maio
- 19 July – 22 July 2010 **Speaker at SAMO 2010**, Sixth International Conference on Sensitivity Analysis of Model Output, *Bocconi University, Milano* - “Variance Decomposition Sensitivity Analysis of a Passive Residual Heat Removal System Model”, Y. Yu, T. Liu, J. Tong, J. Zhao, F. Di Maio, E. Zio, A. Zhang
- 28 June – 2 July 2010 **Key Issues in the World Nuclear Industry Today**
World Nuclear University –Nuclear Energy Association
Hosted by Tsinghua University with the support of URENCO
- 16-17 June 2010 **EU-China Science and Technology Week**
EU Pavilion, Shanghai World Expo, *Shanghai, China*
- 22-24 March 2010 **EURATOM-CAEA (Chinese Atomic Energy Agency) workshop 2010**
Hosted by CAEA with the support of European Delegation in China

Central Garden Hotel , Beijing, China

- 4-5 March 2010 **First STF Workshop: Energy Demand Increase: Consequences and Solutions**, *Peking Univesity , Beijing, China*
- 21-23 October 2009 **Invited speaker at EU-China Risk Forum**, Hosted by Beijing Municipal Institute of Labor Protection with the support of SRA Europe and EU-VRi. - “Computational methods for nuclear power plants safety”, E. Zio, F. Di Maio
- 25 September 2009 **First STF Forum: Science and Technology in China**
EU-China Forum on Science and Techology (ST) in China
Marriot Hotel , Beijing, China
- 24 September 2009 **Invited speaker at The Italian Contribution to the EU Science & Technology Fellowship Programme in China**, Italian Embassy, Beijing, China - “Methods and tools for the Risk-informed design and operation of safe nuclear power plants”, E.Zio, F. Di Maio.
- 21 June 2009 **Science and Research in China**
European Symposium on EU-China Research Collaboration
EU Delegation to China & Mongolia, Beijing (China)
- 5-7 June 2009 **Doing Research in China**
Joint DAAD- Fulbright-STF Forum for Western Academics in China
Beijing (China)
- 21–25 September 2008 **Speaker at ESREL 2008** European Safety and Reliability Conference, *Valencia (Spain)* - “Neural Networks and Order Statistics for Quantifying Nuclear Power Plants Safety Margins”, E. Zio, F. Di Maio, S. Martorell, Y. Nebot
- 22 – 29 July 2007 **SSARS 2007**
Summer Safety and Reliability Seminars
Gdansk-Sopot (Poland)
- 27 February 2007 **Safety management in chemical processes**
LRA, Milano, Italia
- 6-9 March 2006 **First ESARDA course: Nuclear Safeguards and Non Proliferation**
Joint Research Center (JRC), Ispra, Varese, Italia

Refereeing:

International journals:

- *IEEE Transactions on Reliability*
- *Annals of Nuclear Energy*
- *Progress in Nuclear Energy*
- *International Journal of Computational Intelligence Systems*
- *International Journal of Prognostics and Health Management*
- *Risk Analysis*
- *Carbon Management*
- *Mechanical Systems and Signal Processing*
- *Reliability Engineering and System Safety*
- *IEEE Transactions on Nuclear Science*
- *IEEE Transactions on Industrial Informatics*
- *IEEE Transactions on Systems, Man and Cybernetics: Systems*
- *IEEE Access*
- *ISA Transactions*

- *Mathematical Problems in Engineering*
- *Microelectronics Reliability*
- *Nuclear Engineering and Design*
- *Nuclear Engineering and Technology*
- *Nuclear Science and Techniques*
- *Science and Technology of Nuclear Installations*
- *European Journal of Operational Research*
- *Engineering Applications of Artificial Intelligence*
- *Energies*
- *Applied Radiation and Isotopes*
- *Applied Soft Computing*
- *Artificial Intelligence Research Journal*
- *Computational Methods in Sciences and Engineering*
- *Journal of Engineering Tribology*
- *Journal of Mechanical Engineering and Technology*
- *International Journal of Physical Sciences*
- *International Journal of Hydrogen Energy*
- *Journal of Intelligent Manufacturing*
- *Journal of Mechanical Engineering Science*
- *The Journal of Polish Safety and Reliability Association*
- *The European Physical Journal Plus*
- *Neural Computing and Applications*
- *Sensors*
- *Engineering Review*
- *IET Computer Vision*
- *Cogent Mathematics*
- *Mathematics*
- *Journal of Engineering and Technological Sciences*
- *Sustainability*

Editorial Board:

- 01/06/2016 – present
 - **Editorial Board:** European Safety and Reliability Association (ESRA) newsletter
- 14/03/2014 – September 2015
 - **Guest Editor** of the Special Issue “Integrated Deterministic and Probabilistic Safety Analysis (IDPSA) for Safety Assessment of Nuclear Power Plants” on the Science and Technology of Nuclear Installation (STNI) International Journal.
- 27/04/2015 – present
 - **Editorial Board** of the International Journal of Performability Engineering (IJPE), published by RAMS Consultants, covered by SCOPUS (Elsevier), INSPEC, Google Scholar, ProQue, <http://www.ijpe-online.com>
- 28/01/2014 – April 2015
 - **Associate Editor** of the International Journal of Performability Engineering (IJPE), published by RAMS Consultants, covered by SCOPUS (Elsevier), INSPEC, Google Scholar, ProQue, <http://www.ijpe-online.com>
- 11/11/2013 – July 2014
 - **Guest Editor** of the Special Issue of PHM2013 Conference (Milan) on the International Journal of Performability Engineering - PHM-2013

International conferences:

- *PSA2017, International Topical Meeting on Probabilistic Safety Assessment and Analysis, September 24-27, 2017, Pittsburgh (USA).*
- *ICONE25, International Conference on Nuclear Engineering (Shanghai, China, July 2-6, 2017)*
- *NUTHOS-11, 11th International Topical Meeting on Nuclear Reactor Thermal-Hydraulics, Operations and Safety (Gyeongju, Republic of Korea, October 9-13, 2016)*
- *ESREL 2016, European Safety and Reliability Conference (Glasgow, Scotland, 26-29 September 2016)*
- *IEEE RTSI2016 (Research and Technologies for Society and Industry), Sept 7-9, 2016, Bologna (Italy).*
- *ICONE24, International Conference on Nuclear Engineering (Charlotte, NC, USA, June 26-30, 2016)*

- *PHM2015*, Annual Conference of the Prognostics and Health Management Society 2015 Coronado Island Marriott (Coronado, California, USA, October 18-24, 2015)
- *ESREL 2015*, *European Safety and Reliability Conference* (Zurich, Switzerland, 7-10 September 2015)
- *PHM2013*, *Annual Conference of the Prognostics and Health Management Society 2013* (New Orleans, New Orleans, LA USA, October 14-17, 2013)
- *PSA2013 the International Topical Meeting on Probabilistic Safety Assessment and Analysis* (Columbia, South Carolina, USA 22-27 September 2013).
- *PHM2013 the 4th International Conference on Prognostics and System Health Management* (Milan, Italy, September 2013).
- *SSARS2012 Conference* (Gdynia, Poland, September 2012).
- *PSAM11 & ESREL 2012 Conference* (Helsinki, June 2012).
- *IEEE PHM Conference* (Beijing, China, May 2011).
- *ESREL 2011 Conference* (Troyes, September 2011).
- *NPIC & HMIT 2010 7th international topical meeting on Nuclear plant instrumentation, control, and human-machine interface technologies Conference* (7-11 November 2010, Las Vegas (USA)).
- *PSAM10 Tenth International Probabilistic Safety Assessment and Management Conference* (7-11 June 2010, Seattle (USA)).
- *ESREL 2009 Conference* (Prague, September 2009).
- *PSAM9 Ninth International Probabilistic Safety Assessment and Management Conference*, (18-23 May 2008, Hong Kong (China)).

US Nuclear Regulatory Commission Regulation (NUREG) publications:

One NUREG Draft Technical Report (January 2008)

Academic Advising:

Tutor and Advisor of the PhD thesis

Wei Wang – “A Modeling and Simulation Framework for Analyzing Failures in Cyber-Physical Systems for Energy Applications”, Politecnico di Milano, November 2014-2018. Co-advisor: Prof. Enrico Zio.

Sameer Al-Dahidi - “Development of Data-Driven Methods for Prognostics and Health Management under Variable Operational Conditions in Industrial Equipment”, Politecnico di Milano, November 2012-2015. Co-advisor: Prof. Enrico Zio.

Tutor and Co-advisor of the PhD thesis

Binseng Wang -

Luca Pinciroli -

Dario Valcamonico -

ZhaoJun Hao -

TaoYang Li -

Federico Antonello – “Study, development and application of monitoring, diagnostic and prognostic methods for improving reliability and availability of complex industrial systems”. November 2017-2020. Advisor: Prof. Piero Baraldi.

Seyed Mojtaba Hoseyni - “Condition-based PSA for life extensions of NPPs” - November 2016-2019. Advisor: Prof. Enrico Zio.

Mingjing Xu – “Development of computational methods for prognostics and health management of components and systems” - November 2016-2019. Advisor: Prof. Piero Baraldi.

Edoardo Tosoni – “Scenario Methods for the Safety Assessment of Nuclear Waste Repositories”, Politecnico di Milano and Aalto University, November 2015-2018. Advisor: Prof. Enrico Zio.

Alessandro Mancuso – “Optimization methods for Probabilistic Risk Assessment”, Politecnico di Milano and Aalto University, November 2015-2018. Advisor: Prof. Enrico Zio.

Zhe Yang – “Study and Development of methods of extreme learning, deep learning and reservoir computing for prognostics and health management of industrial components”, Politecnico di Milano, November 2015-2018. Advisor: Prof. Piero Baraldi.

Shiyu Chen – “Risk and resilience analysis of complex network systems by innovative modeling and computational methods”, Politecnico di Milano, November 2015-2018. Advisor: Prof. Enrico Zio.

Xiaolei Pan – “Development of computational methods for Integrated Deterministic and Probabilistic Safety Analysis (IDPSA)”, National Defence University of Changsha. Visiting PhD student in Politecnico di Milano (September 2014 – September 2015). Co-advisor: Enrico Zio.

Yue Zhao – “Fault Diagnosis by Neuro Fuzzy Dynamic Uncertain Causal Graphs”, Tsinghua University of Beijing. Visiting PhD student in Politecnico di Milano (November 2014 – May 2015). Co-advisor: Enrico Zio.

- Marco Rigamonti – “Development of diagnostic and prognostic systems for the assessment of the Remaining Useful Life (RUL) of industrial components”, Politecnico di Milano, November 2013-2016. Advisor: Prof. Enrico Zio.
- Yang Hu - “Development of Prognostics and Health Management Methods for Engineering Systems Operating in Evolving Environments”, Politecnico di Milano, November 2012-2015. Advisor: Prof. Piero Baraldi

Advisor of the MSc diploma theses

Oscar Scapinello - - “”

Matteo Fumagalli - “”

- Roberto Mascherona – “A Goal-oriented risk analysis approach for nuclear cyber-physical systems”, Politecnico di Milano, July 2018. Score: 110/110. Co-Advisor: Prof. Enrico Zio.
- Michele Damato – “Development and Application of Computational Methods for Risk Assessment of Nuclear Power Plants”, Politecnico di Milano, July 2017. Score: 96/110. Co-Advisor: Prof. Enrico Zio. Jose Maria Izquierdo.
- Joseph Rizzo Cascio – “A multi-objective optimization embedding an exergy model of a hydrocarbon production system management”, Politecnico di Milano, December 2017. Score: 110 cum laude/110. Co-Advisor: Prof. Enrico Zio.
- Alireza Eslamian – “Blowout Accident Probability Quantification by a Dynamic Event Tree with Hybrid Probabilistic and Possibilistic Uncertainty Treatment”, Politecnico di Milano, July 2017. Score: 96/110. Co-Advisor: Proff. Piero Baraldi and Enrico Zio.
- Federico Antonello - “Condition-Based Probabilistic Safety Assessment: Application to Steam Generator Tube Rupture accident scenarios”, Politecnico di Milano, April 2017. Score: 103/110. Co-Advisor: Prof. Enrico Zio.
- Brieuc Voirin – “Nuclear components degradation modeling”, European Master in Innovation in Nuclear Energy, Institute Polytechnique de Grenoble – PHELMA, France. Internship in Politecnico di Milano (February-July 2016). Co-advisor: Enrico Zio.
- Luca Brivio - “ Probabilistic Analysis of Casing String Failure in an Oil and Gas Well”, Politecnico di Milano, April 2016. Score: 105/110. Co-Advisors: Prof. Piero Baraldi, Prof. Enrico Zio, Dr. Carlos Magno.
- Claudia Picoco - “Dynamic Probabilistic Safety Margin sensitivity analysis for model selection in nuclear power plant probabilistic safety assessment (PSA)”, Politecnico di Milano, August 2014-September 2015. Score: 110 cum laude/110. Co-advisor: Enrico Zio, in collaboration with Electricite de France (EDF) – Industrial Risk Management Department.
- Roberta Rossetti - “Semi-supervised self-organizing maps for post-processing dynamic scenarios of an integrated deterministic and probabilistic safety analysis”, Politecnico di Milano, August 2014-October 2015. Score: 106/110. Co-advisor: Enrico Zio.
- Alessandro Bandini - “Innovative Computational Methods of Sensitivity Analysis and Failure Boundary Estimation for the Risk-Informed Design and Operation of Nuclear Power Plants”, Politecnico di Milano, October 2013-April 2015. Score: 110 cum laude/110. Co-advisor: Enrico Zio, in collaboration with Idaho National Lab (INL), USA.
- Matteo Vagnoli - “Integrated Deterministic and Probabilistic Safety Analysis: innovative methods of risk-based post-processing and on-line clustering”, Politecnico di Milano, December 2013- October 2014. Score: 110 cum laude/110. Co-advisor: Enrico Zio.
- Davide Colli - “Multi-State Physics Modeling for the Reliability Assessment of Nuclear Power Plants Piping Systems”, Politecnico di Milano, June 2013- October 2014. Score: 86/110. Co-advisor: Enrico Zio, in collaboration with Tsinghua University of Beijing, China.
- Ajit Rai – “Development of computational methods for Integrated Deterministic and Probabilistic Safety Analysis (IDPSA)”, European Master in Innovation in Nuclear Energy, Institute Polytechnique de Grenoble – PHELMA, France. Internship in Politecnico di Milano (March-August 2014). Co-advisor: Enrico Zio.
- Giancarlo Nicola – “Passive safety systems in Generation III+ Nuclear Reactors: sensitivity analysis of the PCCS of the AP1000”, Politecnico di Milano, December 2013. Score: 110 cum laude /110. Co-advisor: Enrico Zio
- Samuele Baronchelli - “Innovative methods for prime implicants identification in dynamic nuclear systems”, Politecnico di Milano, April 2013. Score: 110 cum laude /110. Co-advisor: Enrico Zio, in collaboration with City University of Hong Kong, China.
- Marco Rigamonti - “Development of a framework for unsupervised classification of nuclear transients”, Politecnico di Milano, December 2012. Score: 110 cum laude /110. Co-advisors: Enrico Zio, Piero Baraldi.

Co-advisor of the MSc diploma theses

Vincenzo Destino – “”

- Rosario Bellaera – “Computational Methods for the Integrated Deterministic and Probabilistic Safety Assessment of a Simplified Cooling Circuit for a Tokamak Superconducting Magnet”, Politecnico di Torino, July 2018, Co-Advisor: Prof. N. Pedroni.
- Francesco Cannarile - “Continuous-time discrete-state semi-Markov modelling, hierarchical k-nearest neighbours classification and differential evolution optimization for fault diagnostics and prognostics”, Politecnico di Milano, April 2013. Score: 110 cum laude /110. Advisors: Dr. Piero Baraldi.

- Marco Saetta – “Analyse et développement de méthodes pour le calcul des incertitudes des simulations numériques de Mécanique des Fluides”, Politecnico di Milano, December 2013. Score: 110/110. Advisor: Enrico Zio, in collaboration with Electricite de France (EDF)
- Davide Genini - “A Data-Driven Method for Condition Monitoring of Equipments for Energy Applications”, Politecnico di Milano, December 2012. Score: 110 cum laude /110. Advisor: Enrico Zio
- Sergio Saucò - “Ensemble of neural networks for fault prognostics of industrial equipment”, Politecnico di Milano, December 2011. Score: 110/110. Advisor: Dr. Piero Baraldi
- Luca Pappaglione - “Advanced Computational Techniques for Condition Monitoring of Electrical Power Production Plants”, Politecnico di Milano, October 2011. Score: 106/110. Advisor: Prof. Enrico Zio
- Marco Stasi - “Analysis of nuclear power plants accident scenarios by fuzzy pattern recognition”, Politecnico di Milano, December 2009. Score: 110 cum laude /110. Advisor: Prof. Enrico Zio
- Nicolò Berteletti - “Application of soft computing techniques to risk analysis and diagnostic”, Politecnico di Milano, April 2008. Score: 105/110. Advisor: Prof. Enrico Zio

Co-advisor of the Research Projects

- Matteo Vagnoli - “Fire Safety Assessment: an integrated deterministic and probabilistic analysis”, Politecnico di Milano, February 2015- July 2015.
- Selina Ng – “Methods for degradation estimation of bearings”, City University of Hong Kong, November 2010. Advisor: Prof. Kwok Tsui
- Jinfei Hu – “Methods for oil pumps fault detection and classifications”, City University of Hong Kong, May 2010. Advisor: Prof. Kwok Tsui

Referee of PhD theses

- Pablo Martorell Aigües - “Aportaciones al modelado de la indisponibilidad de componentes y la fiabilidad humana para la mejora de la seguridad de las centrales nucleares informada en el riesgo” – Universidad Politecnica de Valencia, 14 february 2019 – Advisors: Prof. Sebastian Martorell, Prof. Ana Sanchez
- Daniele Grosso – “A framework for integrity assessment of multiscale energy infrastructures” – Politecnico di Torino, 13 July 2018 – Advisors: Prof. M. Badami, Prof. A. Carpignano
- Pietro Turati – “Adaptive Simulation Methods for Risk Assessment of Complex Systems” – EcoleCentraleSupélec, Paris, France, 16 May 2017 – Advisors: Prof. Nicola Pedroni, Prof. Enrico Zio

Referee of MSc diploma theses

- Frantoni Filippo – “Probabilistic Economic Evaluation of Upstream Development Projects” – Politecnico di Milano, 20 December 2018 – Advisor: Prof. Giambattista De Ghetto
- Vergari Lorenzo – “Development of a Reduced Order Modeling Approach for Parametrized Thermal-Hydraulics and Neutronics Problems” – Politecnico di Milano, 24 September 2018 – Advisor: Prof. Antonio Cammi
- Erica Barrasso, Luisa Buccolieri – “Capital Cost Estimation for Offshore Oil & Gas Projects: A Stochastic Approach” – Politecnico di Milano, 28 July 2016 – Advisor: Prof. Giambattista De Ghetto
- Francesco Cau - “Parallelizzazione tra Fasi di Progetto di un impianto Oil&Gas” – Politecnico di Milano, 27 April 2016 – Advisor: Prof. Franco Caron
- Costanza Acciai – “Stima del contributo delle sorgenti alle concentrazioni di PM2,5 e COV a Wuhan, Cina”, Politecnico di Milano, 27 April 2016 – Advisor: Prof. Giovanni Lonati.
- Eric Cervi – “Stability Analysis of Density Wave Oscillations with Application to BWR and SCWR Nuclear Reactors”, Politecnico di Milano, 27 April 2016 – Advisor: Prof. Antonio Cammi

Educational Activities

- | | |
|---------------------------|---|
| October 2018 | 8 hours of lectures on “Nuclear Energy” and “Performance assessment of radioactive waste repositories for the MSc Course “Eredità nucleare e sviluppo sostenibile” Prof. Renzo Rosso – Politecnico di Milano |
| September – November 2018 | Instructor of a 20 hours course “Nuclear Thermohydraulics” at the “Master in Nuclear Energy” (in English) run by a consortium of several academic institutions (Université Paris-Sud 11, ParisTech, Supélec, École Centrale Paris, INSTN) with the support of several industrial establishments (EDF, AREVA, GDF SUEZ). |
| 9-12 October 2017 | Instructor at the continuing education course “RAM&PHM 4.0: Advanced methods for Reliability, Availability, Maintainability, Prognostics and Health Management of industrial equipment”, XX Edition, Politecnico di Milano – Energy Department |

- September 2017 – January 2018 Instructor of a 45 hours course “Integrated Deterministic and Probabilistic Safety Analysis of Nuclear Power Plants”, MSc in Nuclear Engineering, Politecnico di Milano.
- September – November 2017 Instructor of a 20 hours course “Nuclear Thermohydraulics” at the “Master in Nuclear Energy” (in English) run by a consortium of several academic institutions (Université Paris-Sud 11, ParisTech, Supélec, École Centrale Paris, INSTN) with the support of several industrial establishments (EDF, AREVA, GDF SUEZ).
- 19 June 2017 4 hours of lectures on “Integrated Deterministic and Probabilistic Safety Analysis” for the MSc Course “Computational Methods for Safety and Risk Analysis A+B” Proff. Baraldi, Cadini – Politecnico di Milano
- 12 June 2017 4 hours of lectures on “Integrated Deterministic and Probabilistic Safety Analysis” for the MSc Course “Computational Methods for Safety and Risk Analysis A+B” Prof. Enrico Zio – Politecnico di Milano
- 17 May 2017 Invited lecture “A Condition Monitoring-Based (CMB) framework for Probabilistic Safety Assessment (PSA)”, workshop on “Advanced modeling and simulation for safety and reliability analysis”, 17 May 2017, EcoleCentraleSupélec, Paris, France.
- October 2016 – January 2017 Instructor of a 45 hours course “Integrated Deterministic and Probabilistic Safety Analysis of Nuclear Power Plants”, MSc in Nuclear Engineering, Politecnico di Milano.
- 21-24 November 2016 Instructor at the continuing education course “Advanced methods for reliability, availability, maintainability, diagnostics and prognostics of industrial equipment”, XVIII Edition, Politecnico di Milano – Energy Department
- September – December 2016 Instructor of a 20 hours course “Nuclear Thermohydraulics” at the “Master in Nuclear Energy” (in English) run by a consortium of several academic institutions (Université Paris-Sud 11, ParisTech, Supélec, École Centrale Paris, INSTN) with the support of several industrial establishments (EDF, AREVA, GDF SUEZ).
- 10 June 2016 4 hours of lectures on “Integrated Deterministic and Probabilistic Safety Analysis” for the MSc Course “Computational Methods for Safety and Risk Analysis A+B” Proff. Baraldi, Cadini – Politecnico di Milano
- 16-17 May 2016 10 hours of lectures on “Monte Carlo Simulation for Integrated Deterministic and Probabilistic Safety Analysis” for the MSc Course “Computational Methods for Safety and Risk Analysis A+B” Prof. Enrico Zio – Politecnico di Milano
- 5 April 2016 Instructor at the PhD course “Dealing with uncertainties in construction”, Architecture, built environment and construction engineering, Politecnico di Milano (4 hours).
- 10 March 2016 Instructor at the continuing education course “Veicoli su rotaia e su gomma sistemi di alimentazione, trazione e segnalamento – Affidabilità”, I Edition, Politecnico di Milano – Energy Department for ATM (Azienda Trasporti Milanese).
- September – December 2015 Instructor of a 20 hours course “Nuclear Thermohydraulics” at the “Master in Nuclear Energy” (in English) run by a consortium of several academic institutions (Université Paris-Sud 11, ParisTech, Supélec, École Centrale Paris, INSTN) with the support of several industrial establishments (EDF, AREVA, GDF SUEZ).
- 16-19 November 2015 Instructor at the continuing education course “Advanced methods for reliability, availability, maintainability, diagnostics and prognostics of industrial equipment”, XVIII Edition, Politecnico di Milano – Energy Department
- 19-24 October 2015 Instructor of a 30 hours course “Integrated Deterministic and Probabilistic Safety Assessment of Nuclear Power Plants” at the State Nuclear Power Technology Research and Develop Centre (SNPTC), Beijing, China.

- 16 October 2015 Instructor at the PhD course “Advanced Topics in Risk and Reliability Analysis of Energy Systems”, Politecnico di Milano (8 hours).
- 8 June 2015 4 hours of lecture on “Event Trees and Integrated Deterministic and Probabilistic Safety Analysis” for the MSc Course “Computational Methods for Safety and Risk Analysis A+B” Prof. Enrico Zio – Politecnico di Milano
- February – June 2015 32 hours of teaching assistantship for the MSc Course “Reliability, Safety and Risk Analysis A+B” at the Politecnico di Milano
- 24-28 November 2014 Instructor at the continuing education course “Advanced methods for reliability, availability, maintainability, diagnostics and prognostics of industrial equipment”, XVII Edition, Politecnico di Milano – Energy Department
- 30 September 2014 8 hours lectures on “Prognostics and Health Management” and “Artificial Neural Networks for regression and classification” – an overview”, Summer School on Maintenance Modeling and Applications, September 27- October 2, 2014, Alghero, Italy, sponsored by INNHF FP7 programme, FP7-PEOPLE-2011-ITN: Project ID 289837
- September – December 2014 Instructor of a 20 hours course “Nuclear Thermohydraulics” at the “Master in Nuclear Energy” (in English) run by a consortium of several academic institutions (Université Paris-Sud 11, ParisTech, Supélec, École Centrale Paris, INSTN) with the support of several industrial establishments (EDF, AREVA, GDF SUEZ).
- 2 July 2014 Invited lecture “Prognostics and Health Management – an overview”, Summer School Diagnostics and Prognostics of Fuel Cell Systems, 01-04 July 2014, FCLAB, Belfort, France.
- February – June 2014 32 hours of teaching assistantship for the MSc Course “Reliability, Safety and Risk Analysis A+B” at the Politecnico di Milano
- January 2014 Instructor at the PhD course “Advanced Topics in Risk and Reliability Analysis of Energy Systems”, Politecnico di Milano (8 hours).
- September – December 2013 Instructor of a 20 hours course “Nuclear Thermohydraulics” at the “Master in Nuclear Energy” (in English) run by a consortium of several academic institutions (Université Paris-Sud 11, ParisTech, Supélec, École Centrale Paris, INSTN) with the support of several industrial establishments (EDF, AREVA, GDF SUEZ).
- 22-23 October 2013 Instructor at the continuing education course “Advanced methods for reliability, availability, maintainability, diagnostics and prognostics of industrial equipment” Politecnico di Milano – Energy Department
- 2 September 2013 Instructor at the “Risk and Uncertainty Modelling”, Phd Summer School 2-8 September 2013 - Como, Italy, organized by Politecnico di Milano, Ecole Centrale Paris and financed by Fondazione Cariplo
- 27 August 2013 Invited lecture “Integrated Deterministic and Probabilistic Safety Analysis: Methods and case studies”, Phd Summer School in "Risk & Uncertainty" - Bauhaus-Universität Weimar, Germany.
- February – June 2013 40 hours of teaching assistantship for the MSc Course “Reliability, Safety and Risk Analysis A+B” at the Politecnico di Milano
- 4 April 2013 6 hours of lecture on “Artificial Neural Networks for Fault Diagnosis” for the MSc Course “Nuclear Power Plants Operation and Maintenance” Prof. Piero Baraldi – Politecnico di Milano

7 September 2012	Invited lecture “Prognostics and Health Management: a frontier of the reliability of components and systems (Methods and Applications)”, Summer School in Electronic Measurements - Seminario di Eccellenza “Italo Gorini”, Politecnico di Bari.
September – December 2012	Instructor of a 20 hours course “Nuclear Thermohydraulics” at the “Master in Nuclear Energy” (in English) run by a consortium of several academic institutions (Université Paris-Sud 11, ParisTech, Supélec, École Centrale Paris, INSTN) with the support of several industrial establishments (EDF, AREVA, GDF SUEZ).
20 September 2012	Instructor at the continuing education course “Advanced methods for reliability, availability, maintainability, diagnostics and prognostics of industrial equipment” Politecnico di Milano – Energy Department
February – June 2012	25 hours of teaching assistantship for the MSc Course “Reliability, Safety and Risk Analysis A+B” at the Politecnico di Milano
26 April 2012	2 hours of lecture on “Artificial Neural Networks for the assessment of Radioactive Waste Repositories” for the MSc Course “Safety Assessment of Radioactive Waste Repositories” Prof. Francesco Cadini – Politecnico di Milano
17 April 2012	4 hours of lecture on “Artificial Neural Networks for Fault Diagnosis” for the MSc Course “Nuclear Power Plants Operation and Maintenance” Prof. Piero Baraldi – Politecnico di Milano
March 2012	Instructor of a 23 hours course “Simulación y Redes Neuronales” at the “Master Universitario en Ingeniería de Análisis de Datos, Mejora de Procesos y Toma de Decisiones” (in Spanish) of the Departamento de Estadística e Investigación Operativa Aplicadas y Calidad, Universidad Politecnica de Valencia, Spain.
October 2011	Instructor at the course “Quantitative Risk Assessment” Eni Corporate University – S. Giuliano Milanese
23 September 2011	Instructor at the continuing education course “Advanced methods for reliability, availability, maintainability, diagnostics and prognostics of industrial equipment” Politecnico di Milano – Energy Department
15 June 2011	Instructor at the course “Reliability, Availability and Maintainability with Application in the Development Phases for Oil & Gas Upstream Projects” Eni Corporate University – S. Giuliano Milanese
16 May 2011	2 hours of lecture on “Failure prognostics: Methods and Applications” for the MSc Course “Reliability, Safety and Risk Analysis A+B” Prof. Enrico Zio – Politecnico di Milano
February – June 2011	25 hours of teaching assistantship for the MSc Course “Reliability, Safety and Risk Analysis A+B” at the Politecnico di Milano
June 2008	15 hours of tutoring for the PhD Course “Advanced topics in reliability and risk assessment” Prof.: Tunc Aldemir – Ohio State University
March 2008- July 2008	30 hours of tutoring for the MSc Course “Metodi computazionali per la sicurezza e l’analisi di rischio I+II” Prof. Enrico Zio – Politecnico di Milano

Organizational Activities

- **Program Co-Chair** of the **Joint ESREL 2020** (European Safety and Reliability Conference) and **PSAM15** (Probabilistic Safety Analysis and Management Conference), July 21-26, 2020, *Venice (Italy)*.
- **Technical Committee member** of the Conference on Information and Digital Technologies 2019 (IDT 2019), June 25th - 27th, 2019, *Zilina (Slovakia)*.

- **Technical Committee member** of **COMPLEXIS 2019**, the 4th International Conference on Complexity, Future Information Systems and Risk, May 2-4, 2019, *Crete (Greece)*.
- **Technical Programme Committee member** of the **PSAM14**, Probabilistic Safety Analysis and Management Conference, September 16-21, 2018, at the UCLA Luskin Conference Center in *Los Angeles, California (USA)*
- **Steering Committee member and Technical Programme member** of the **International Conference INCOM 2018 - Information Control Problems in Manufacturing**, June 11-13, *Bergamo (Italy)*.
- **Technical Committee member** of **COMPLEXIS 2018**, the International Conference on Complexity, Future Information Systems and Risk, March 20-21, 2018, *Madeira (Portugal)*.
- **Program Chair member** of the **2017 2nd International Conference on System Reliability and Science (ICSRS 2017) with its workshop 2017 International Conference on Reliability Engineering (ICRE 2017)**, December 20-22, 2017, *Milan (Italy)*.
- **Co-chair** of the “Seminar series on system reliability, risk and resilience (Fall Seminar) - Reliability and Maintenance 4.0: the present future of industry development”, IEEE DAY, 13 October 2017, *Milano (Italy)*.
- **Co-chair** of the workshop “Analisi delle incertezze nei calcoli di ingegneria”, organized by NAFEMS, April 10, 2017, *Milano (Italy)*.
- **Technical Programme Committee member** of **ESREL 2017**, European Safety and Reliability Conference, June 18-22 2017, *Portorož, (Slovenia)*.
- **Chairman** of the Sessions “Dynamic Reliability” and “Level 2 and 3 PSA”, **PSA2017**, International Topical Meeting on Probabilistic Safety Assessment and Analysis, September 24-27, 2017, *Pittsburgh (USA)*.
- **Technical Programme Committee member** of the **PSA2017**, International Topical Meeting on Probabilistic Safety Assessment and Analysis, September 24-27, 2017, *Pittsburgh (USA)*.
- **Technical Committee member** of the Conference on Information and Digital Technologies 2017 (DT 2017), July 4-7, 2017, *Zilina (Slovakia)*.
- **Technical Committee member** of the 26th IEEE International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises IEEE WETICE 2017, June 21-23, 2017, *Poznan (Poland)*.
- **Technical Track Organizer** on “Security, Safety and Trust Management” at the 26th IEEE International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises IEEE WETICE 2017, June 21-23, 2017, *Poznan (Poland)*.
- **Technical Committee member** of **COMPLEXIS 2017**, the International Conference on Complexity, Future Information Systems and Risk, April 24-26, 2017, *Porto (Portugal)*.
- **Technical Committee member** of the Symposium on Data Analytics for Advanced Manufacturing at the IEEE 2016 Big Data Conference, Dec.5-8, 2016 *Washington D.C. (USA)*.
- **Technical Committee member** of the AEIT International Annual Conference, October 5-7, 2016, *Capri (Italy)*.
- **Technical Programme Committee member** of **ESREL 2016**, European Safety and Reliability Conference, September 26-29 2016, *Glasgow (Scotland)*.
- **Co-organizer** of the Special Session on “PHM under non-stationary environment and evolving operational conditions” a Prognostics and System Health Management Conference (PHM-2016 Chengdu), October 19-21 2016, *Chengdu, China*.
- **Co-organizer** of the Special Session on “Integrated Deterministic and Probabilistic computational Safety Assessment (IDPSA)” of **PSAM13**, Probabilistic Safety Analysis and Management Conference, 2-7 October 2016, *Seoul, Korea*.
- **Technical Program Committee member** of the **IEEE RTSI2016** (Research and Technologies for Society and Industry), Sept 7-9, 2016, *Bologna (Italy)*.
- **Program Committee member** of the Conference on Information and Digital Technologies 2016 (**IDT 2016**), July 5-7, 2016, *Rzeszow (Poland)*.
- **Chairman** of the Session “System Reliability: Multi-State and Network Systems”, **ESREL 2015**, European Safety and Reliability Conference, 7-10 September 2015, *Zurich (Switzerland)*
- **Technical Committee member** (Track Leader) of **ESREL 2015**, European Safety and Reliability Conference, 7-10 September 2015, *Zurich (Switzerland)*
- **Technical Committee member** of the Conference on Digital Technologies 2015 (DT 2015), July 7-9, 2015, *Zilina (Slovakia)*.
- **Chairman** of the “IEEE Reliability Society Outreach Event, Seminar&Workshop”, 28 November 2014, *Politecnico di Milano, Milano, Italy*.
- **Chairman** of the Session “Nuclear Engineering”, **ESREL 2014**, European Safety and Reliability Conference, 15-18 September 2014, *Wroclaw (Poland)*
- **Co-organizer** of the Special Session on “Passive Systems Reliability” of **PSAM12**, Probabilistic Safety Analysis and Management Conference, 22-27 June 2014, *Honolulu, Hawaii (USA)*.
- **Co-organizer** of the Special Session on “Dynamic Reliability” of **PSAM12**, Probabilistic Safety Analysis and Management Conference, 22-27 June 2014, *Honolulu, Hawaii (USA)*.

- **Technical Committee member** of the Conference on Digital Technologies 2014 (DT 2014), July 9-11, 2014, *Zilina (Slovakia)*.
- **Technical Committee member** of **PSA2013**, International Topical Meeting on Probabilistic Safety Assessment and Analysis, September 22-27, 2013, *Columbia (South Carolina – USA)*.
- **Chairman** of the session “PHM in Nuclear Industry” at **PHM2013**, the 4th International Conference on Prognostics and System Health Management, 8 September 2013, *Milan (Italy)*
- **Co-Director of Tutorials for PHM2013**, the 4th International Conference on Prognostics and System Health Management, 8 September 2013, *Milan (Italy)*.
- **Scientific Secretariat** (Local Scientific Chair) of **PHM2013**, the 4th International Conference on Prognostics and System Health Management, 8-11 September 2013, *Milan (Italy)*.
- **Technical Committee member** of **PHM2013**, the 4th International Conference on Prognostics and System Health Management, 8-11 September 2013, *Milan (Italy)*.
- **Co-organizer** of the Special Session on “PHM in Nuclear Industry” of **PHM2013**, the 4th International Conference on Prognostics and System Health Management, 8-11 September 2013, *Milan (Italy)*.
- **Technical Committee member** (Track Leader) of **PSAM11 & ESREL 2012**, European Safety and Reliability Conference, 25-29 June 2012, *Helsinki (Finland)*
- **Chairman** of the session “Passive safety systems reliability” at **PSAM11 & ESREL 2012**, European Safety and Reliability Conference, 25-29 June 2012, *Helsinki (Finland)*
- **Track Leader** for the “Passive safety systems reliability” sessions at **PSAM11 & ESREL 2012**, European Safety and Reliability Conference, 25-29 June 2012, *Helsinki (Finland)*
- **Technical Committee member** of **IEEE-PHM2012**, IEEE Prognostics and Health Management Conference, 23-25 May 2011, *Beijing (China)*
- **Technical Committee member** (Track Leader) of **ESREL 2011**, European Safety and Reliability Conference, 18-22 September 2011, *Troyes (France)*
- **Chairman** of the Session “Nuclear Industry”, **ESREL 2011**, European Safety and Reliability Conference, 18-22 September 2011, *Troyes (France)*
- **Chairman** of the Session “Fault Diagnosis, Prognostics and Health Management”, **ESREL 2011**, European Safety and Reliability Conference, 18-22 September 2011, *Troyes (France)*
- **Co-organizer** of the Tsinghua University and EU Delegation in China and Mongolia Networking Event – “*Energy and sustainable development: challenges and opportunities*”, 24-25 November 2010, Beijing (China).
- **Co-organizer** of the Special Session on “Passive Safety Systems” of the *International Topical Meeting on Probabilistic Safety Assessment and Analysis (PSA2011)*, 13-17 March 2011, Wilmington (USA).
- **Co-organizer** of the Special Session on “Reliability Analysis of Passive Safety Systems” of the *Tenth International Probabilistic Safety Assessment and Management (PSAM 10) Conference*, 7-11 June 2010, Seattle (USA).

Language skills:

Italian: Mother tongue

English: Fluent (Spoken and written)

Spanish: Fluent (Spoken and written)

Chinese: Good (Spoken) – Basics (Written)

Computer skills:

Operating systems:

Ms-Dos; Windows 9X, NT, ME, 2000, XP, Vista, W7.

Linux (Xandros, Ubuntu).

Softwares:

Office (Word, Excel, PowerPoint, Outlook);

OpenOffice.org Suite;

Acrobat, Winedt, Gsview, LaTeX;

Matlab® (and Tools).

Programming: Pascal, C, Fortran 77/90, Matlab

Professional membership:

July 2018 – present

February 2016 – present

IEEE Senior Member (PES & RL)

ESRA Nuclear Technical Committee Co-Chair

November 2015 – present
April 2015 – present
September 2011– present

January 2011 – present
January 2009 – present

ESRA member
IEEE Power & Energy Society (PES) Member
GROUP LEADER Alumni Nucleare
Alumni Association - Politecnico di Milano
IEEE Reliability (RL) Society Member
IEEE Member (Number 90497240)
