

Davide LA TORRE

Professeur

Académie : Digitalisation

Centre de recherche : SKEMA Centre for Analytics and Management Science

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Intérêts de recherche

Applied Mathematics, Artificial Intelligence, Mathematical Modelling, Optimization and Control

Domaines d'enseignement

Applied Mathematics, Artificial Intelligence, Mathematical Modelling, Optimization and Control

Formation

2023	Qualification à un poste de Professeur des universités ((Professeur Ordinaire), Economie théorique (13 A1), Italie
2023	Qualification à un poste de Professeur des universités (Professeur Associé) , Recherche Opérationnelle (01 A6), Italie
2022	Qualification à un poste de Professeur des universités in Mathématiques appliquées (CNRS 26), France
2022	Qualification à un poste de Professeur des universités, Economie (CNRS 05), France
2022	Qualification à un poste de Professeur des universités, Informatique (CNRS 27), France
2021	HDR in Applied Mathematics, Université Côte d'Azur, France
2020	Qualification à un poste de Professeur des universités (Professeur Associé), Analyse Mathématique (01 A3), Italie
2018	Qualification à un poste de Professeur des universités (Professeur Ordinaire), Economie publique (13 A3), Italie
2018	Qualification à un poste de Professeur des université (Professeur Ordinaire), Économie politique (13 A2), Italie
2012	Qualification à un poste de Professeur des universités (Professeur Ordinaire), Méthodes Mathématiques pour l'économie et la finance (13 D4), Italie
2002	Ph.D. in Computational Mathematics and Operations Research, University of Milan, Italie
1997	Master in Applied and Industrial Mathematics, University of Milan, Italie
1993	Diploma (60/60) in Computer Science, ITIS Computer Science School, Italie

2022	Certificate in Artificial Intelligence in Health Care, Massachusetts Institute of Technology (MIT), Etats-Unis d'Amérique
2021	Certificate in Quantum Computing Fundamentals, Massachusetts Institute of Technology (MIT), Etats-Unis d'Amérique
2021	Certificate in Machine Learning, Modeling, and Simulation: Engineering Problem-Solving in the Age of AI, Massachusetts Institute of Technology (MIT), Etats-Unis d'Amérique
2021	Certificate in Machine Learning, Modeling, and Simulation Principles, Massachusetts Institute of Technology (MIT), Etats-Unis d'Amérique
2021	Certificate in Applying Machine Learning to Engineering and Science, Massachusetts Institute of Technology (MIT), Etats-Unis d'Amérique
2021	Certificate in Quantum Algorithms for Cybersecurity, Chemistry, and Optimization, Massachusetts Institute of Technology (MIT), Etats-Unis d'Amérique
2017	Certificate in Big Data and SocialAnalytics, Massachusetts Institute of Technology (MIT), Etats-Unis d'Amérique
2017	Certificate in Project Management, University of Adelaide, Australie
2017	Certificate in Supply Chain Analytics, Massachusetts Institute of Technology (MIT), Etats-Unis d'Amérique

Expérience Professionnelle

Positions académiques principales

Depuis 2019	Professeur des Universités (HDR avec qualification CNRS) de Mathématiques Appliquées et Intelligence Artificielle, SKEMA Business School, France
Depuis 2000	Professeure des Universités d'Intelligence Artificielle et de Sciences de la Décision en Santé et Médecine, Università degli Studi di Milano "La Statale", Italie
2018 - 2019	Full Professor, Dubai Business School, Emirats Arabes Unis
2017 - 2018	Full Professor and Department Chair, Nazarbayev University, Kazakhstan
2013 - 2016	Associate Professor and Associate Department Chair (cross-appointed), Department of Applied Mathematics and Sciences, and Department of Industrial and System Engineering, Khalifa University, Emirats Arabes Unis

Autres affiliations académiques

Depuis 2024	Member of the Doctoral School in Systems Medicine, Università degli Studi di Milano "La Statale", Italie
Depuis 2021	Radiomics Board Member, European Institute of Oncology, Italie
Depuis 2020	Visiting Professor and Member of the Scientific Committee of the Artificial Intelligence Institute, Abu Dhabi School of Management, Emirats Arabes Unis
Depuis 2019	Track Coordinator - Finance Specialization - Two Year MSc, SKEMA Business School, France
Depuis 2015	Adjunct Professor, University of Waterloo, Canada
Depuis 2015	Member of the Doctoral School in Decision Sciences, Insubria University, Italie
2022 - 2023	Doyen Associé, SKEMA Business School, France
2020 - 2023	Directeur de l'Institut d'Intelligence Artificielle, SKEMA Business School, France
2007 - 2023	Adjunct Professor, Department of Mathematics and Statistics, University of Guelph, Canada
2019 - 2022	Track Coordinator - L3/M1 PGE in Finance and Quants, SKEMA Business School, France
2020 - 2021	Track Coordinator - L3/M1 PGE in Artificial Intelligence for Managers, SKEMA Business School, France
2019	Visiting Professor, Universidad de Granada, Espagne
2017 - 2018	Department Chair, Nazarbayev University, Kazakhstan
2012	Visiting Professor, Australian National University, Australie

Autres affiliations académiques

2008	Visiting Professor, Laurentian University, Canada
2008	Visiting Professor, University of York, Royaume Uni
2007	Visiting Professor, University of York, Royaume Uni
2007	Visiting Professor, Australian National University, Australie
2003 - 2005	Program Head - Master in International Economics and Finance, University of Milan, Italie
2003 - 2005	Program Head - Master in Data Analysis and Marketing Intelligence, University of Milan, Italie
2001 - 2003	Program Head - Master in Business Intelligence and Data Analysis, University of Milan, Italie

Contrats de recherche, prix et distinctions

Prix et distinctions

2023	Meilleure contribution à l'hybridation dans l'IA, SKEMA Business School, France
2022	Prix de l'érudit le plus productif, SKEMA Business School, France
2021	Outstanding research award, SKEMA Business School, France
2015	Outstanding research award, Khalifa University, Emirats Arabes Unis
2015	Outstanding research award, University of Milan, Italie

Contrats de recherche

2013	Khalifa University KUIRF Level 2 (co-principal investigator), Khalifa University, Emirats Arabes Unis
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Publications

Articles académiques revus

BRUSSET, X., JEBALI, A., LA TORRE, D. et LIUZZI, D. (2025). Production optimization in the time of pandemic: an SIS-based optimal control model with protection effort and cost minimization. *Annals of Operations Research*, 344, pp. 79-102.

FRASCA, M., LA TORRE, D., PRAVETTONI, G. et CUTICA, I. (2025). Combining convolution neural networks with long-short term memory layers to predict Parkinson's disease progression. *International Transactions in Operational Research*, 32(4), pp. 2159-2188.

BROEKAERT, J., HAFIZ, F., LA TORRE, D. et JAYARAMAN, R. (2025). Managing resilience and viability of supranational supply chains under epidemic control scenarios. *Omega*, 133, pp. 103234.

BROEKAERT, J., LA TORRE, D., HAFIZ, F. et BRUSSET, X. (2025). The diverging control policy's hand in supranational supply chain reconfiguration. *International Journal of Production Economics*, 284, pp. 109567.

LA TORRE, D., MENDIVIL, F. et ROCCA, M. (2024). Modeling portfolio efficiency using stochastic optimization with incomplete information and partial uncertainty. *Annals of Operations Research*, 334(1-3), pp. 241-263.

LA TORRE, D., LIUZZI, D., REPETTO, M. et ROCCA, M. (2024). Enhancing deep learning algorithm accuracy and stability using multicriteria optimization: an application to distributed learning with MNIST digits. *Annals of Operations Research*, 339, pp. 455-475.

BROEKAERT, J., LA TORRE, D. et HAFIZ, F. (2024). Competing control scenarios in probabilistic SIR epidemics on social-contact networks. *Annals of Operations Research*, 336, pp. 2037-2060.

LA TORRE, D., MARSIGLIO, S., MENDIVIL, F. et PRIVILEGGI, F. (2024). Stochastic disease spreading and containment policies under state-dependent probabilities. *Economic Theory*, 77, pp. 127-168.

LA TORRE, D., MARSIGLIO, S. et PRIVILEGGI, F. (2024). Infectious diseases and social distancing under state-dependent probabilities. *Annals of Operations Research*, 337(3), pp. 993-1008.

CAMACHO, C., DESBORDES, R. et LA TORRE, D. (2024). A time-space integro-differential economic model of epidemic control. *Economic Theory*, 77(1-2), pp. 307-348.

LA TORRE, D., LIUZZI, D. et MARSIGLIO, S. (2024). Epidemic outbreaks and the optimal lockdown area: a spatial normative approach. *Economic Theory*, 77, pp. 349-411.

HAFIZ, F., BROEKAERT, J., LA TORRE, D. et SWAIN, A. (2024). A multi-criteria approach to evolve sparse neural architectures for stock market forecasting. *Annals of Operations Research*, 167(106680), pp. 1-45.

BROEKAERT, J., LA TORRE, D. et HAFIZ, F. (2024). The impact of the psychological effect of infectivity on Nash-balanced control strategies for epidemic networks. *Annals of Operations Research*.

FRASCA, M., LA TORRE, D., PRAVETTONI, G. et CUTICA, I. (2024). Explainable and interpretable artificial intelligence in medicine: a systematic bibliometric review. *Discover Artificial Intelligence*, 4(15), pp. 1-21.

LA TORRE, D., ZUCCOTTO, M., CASTELLINI, A., MOLA, L. et FARINELLI, A. (2024). Reinforcement learning applications in environmental sustainability: a review. *Artificial Intelligence Review*, 57(88), pp. 1-68.

MARVASO, G., ISAKSSON, L.J., ZAFFARONI, M., VINCINI, M.G., SUMMERS, P.E., PEPA, M. ... JERECZEK-FOSSA, B.A. (2024). Can we predict pathology without surgery? Weighing the added value of multiparametric MRI and whole prostate radiomics in integrative machine learning models. *European Radiology*, 34, pp. 6241-6253.

BROEKAERT, J., LA TORRE, D., HAFIZ, F. et REPETTO, M. (2024). A comparative cost assessment of coalescing epidemic control strategies in heterogeneous social-contact networks. *Computers & Operations Research*, 167, pp. 106680.

BERENGUER, M.I., GAMEZ, D., KUNZE, H., LA TORRE, D. et RUIZ GALAN, M. (2024). Solving direct and inverse problems for Fredholm-type integro-differential equations with application to pollution diffusion modeling. *Mathematics and Computers in Simulation*, 223, pp. 394-404.

FRASCA, M. et LA TORRE, D. (2024). An extended Daugman's algorithm for iris with eye pathology recognition. *Expert Systems with Applications*, 252, Part A(124160), pp. 1-12.

DE FRUTOS, J., LA TORRE, D., LIUZZI, D., MARSIGLIO, S. et MARTÍN-HERRAN, G. (2024). Balancing mitigation policies during pandemics: economic, health, and environmental implications. *Annals of Operations Research*.

LA TORRE, D., MAGGISTRO, R. et MARSIGLIO, S. (2024). Transboundary pollution control under evolving social norms: a mean-field approach. *Decisions in Economics and Finance*.

FRASCA, M., LA TORRE, D., REPETTO, M., DE NICOLÒ, V., PRAVETTONI, G. et CUTICA, I. (2024). Artificial intelligence applications to genomic data in cancer research: a review of recent trends and emerging areas. *Discover Analytics*, 2(1), pp. 1-10.

LA TORRE, D. et MAGGISTRO, R. (2024). Multi-agent dynamic financial portfolio management: a differential game approach. *Annals of Operations Research*, pp. 1-22.

HAFIZ, F., NAIK, C., LA TORRE, D. et SWAIN, A. (2024). Quantification of Nonstationary Power Quality Events: A New Index Based on l_p Norm of Energy. *IEEE Transactions on Systems, Man and Cybernetics: Systems*, 54(12), pp. 7457 - 7471.

LA TORRE, D. et ROCCA, M. (2024). Distributionally robust multiobjective optimization with application to risk measure theory. *Annals of Operations Research*, pp. 1-20.

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BEN ABDELAZIZ, F. et LA TORRE, D. (2023). Robust generalized Merton-type financial portfolio models with generalized utility. *Annals of Operations Research*, 330, pp. 55-72.

LA TORRE, D., COLAPINTO, C., DUROSINI, I. et TRIBERTI, S. (2023). Team Formation for Human-Artificial Intelligence Collaboration in the Workplace: A Goal Programming Model to Foster Organizational Change. *IEEE Transactions on Engineering Management*, 70(5), pp. 1966-1976.

BRUSSET, X., JEBALI, A. et LA TORRE, D. (2023). Production optimisation in a pandemic context. *International Journal of Production Research*, 61(5), pp. 1642-1663.

- BRUSSET, X., DAVARI, M., KINRA, A. et LA TORRE, D. (2023). Modelling ripple effect propagation and global supply chain workforce productivity impacts in pandemic disruptions. *International Journal of Production Research*, 61(8), pp. 2493-2512.
- TRIBERTI, S., LA TORRE, D. et RIVA, G. (2023). The Artificial Face (ART-F) Project: Addressing the Problem of Interpretability, Interface, and Trust in Artificial Intelligence. *Cyberpsychology, Behavior, and Social Networking*, 26(4), pp. 318-320.
- BUCCI, A., LA TORRE, D., LIUZZI, D. et MARSIGLIO, S. (2023). A network-based economic growth model with endogenous migration and poverty traps. *Metroeconomica*, 74(4), pp. 833-857.
- HAFIZ, F., BROEKAERT, J., LA TORRE, D. et SWAIN, A. (2023). Co-evolution of Neural Architectures and Features for Stock Market Forecasting: A Multi-objective Decision Perspective. *Decision Support Systems*, 174, pp. 114015.
- BRUSSET, X., IVANOV, D., JEBALI, A., LA TORRE, D. et REPETTO, M. (2023). A dynamic approach to supply chain reconfiguration and ripple effect analysis in an epidemic. *International Journal of Production Economics*, 263, pp. 108935.
- BERENGUER, M.I., GAMEZ, D., GARRALDA-GUILLEM, A.I., KUNZE, H., LA TORRE, D. et RUIZ GALAN, M. (2023). Solving inverse problems for mixed-variational equations on perforated domains. *Computational and Applied Mathematics*, 42(297).
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- VOLPE, S., ZAFFARONI, M., PIPERNO, G., VINCINI, M.G., ZERELLA, M.A., MASTROLEO, F. ... JERECZEK-FOSSA, B.A. (2023). Multi-omics integrative modelling for stereotactic body radiotherapy in early-stage non-small cell lung cancer: clinical trial protocol of the MONDRIAN study. *BMC Cancer*, 23(1), pp. 1236.
- ISAKSSON, L.J., REPETTO, M., SUMMERS, P.E., PEPA, M., ZAFFARONI, M., VINCINI, M.G. ... JERECZEK-FOSSA, B.A. (2023). High-performance prediction models for prostate cancer radiomics. *Informatics in Medicine Unlocked*, 37, pp. 101161.
- VINCINI, M.G., MARVASO, G., ISAKSSON, L.J., ZAFFARONI, M., PEPA, M., CORRAO, G. ... JERECZEK-FOSSA, B.A. (2023). Added value of MRI radiomics to predict pathological status of prostate cancer patients. *European Urology*, 83, pp. S1799-S1800.
- KUNZE, H. et LA TORRE, D. (2022). Solving inverse problems for steady-state equations using a multiple criteria model with collage distance, entropy, and sparsity. *Annals of Operations Research*, 311, pp. 1051-1065.
- LA TORRE, D. et MENDIVIL, F. (2022). Stochastic efficiency and inefficiency in portfolio optimization with incomplete information: a set-valued probability approach. *Annals of Operations Research*, 311, pp. 1085-1098.
- KUNZE, H., LA TORRE, D. et MARSIGLIO, S. (2022). Sustainability and spatial spillovers in a multicriteria macroeconomics model. *Annals of Operations Research*, 311, pp. 1067-1084.
- LA TORRE, D., LIUZZI, D., MAGGISTRO, R. et MARSIGLIO, S. (2022). Mobility Choices and Strategic Interactions in a Two-Group Macroeconomic-Epidemiological Model. *Dynamic Games and Applications*, 12, pp. 110-132.
- LA TORRE, D., LIUZZI, D. et MARSIGLIO, S. (2022). Geographical heterogeneities and externalities in an epidemiological-macroeconomic framework. *Journal of Public Economic Theory*, 24(5), pp. 1154-1181.
- BRUSSET, X., JEBALI, A., LA TORRE, D. et MAZAHIR, S. (2022). Optimal Pollution Control in a Dynamic Multi-echelon Supply Chain. *Environmental Modeling and Assessment*, 27, pp. 585-598.
- LA TORRE, D., BEN ABDELAZIZ, F. et ALAYA, H. (2021). Dynamic Programming and Optimal Control for Vector-Valued Functions: A State-of-the-art Review. *RAIRO - Operations Research*, 55, pp. 351-364.
- LA TORRE, D., LIUZZI, D. et MARSIGLIO, S. (2021). Epidemics and macroeconomic outcomes: Social distancing intensity and duration. *Journal of Mathematical Economics*, 93, pp. 102473.
- OTERO, D., LA TORRE, D., MICHAILOVICH, O. et VRSCAY, E. (2021). Optimization of structural similarity in mathematical imaging. *Optimization and Engineering*, 22, pp. 2367-2401.

- LA TORRE, D., MARSIGLIO, S., MENDIVIL, F. et PRIVILEGGI, F. (2021). Public Debt Dynamics under Ambiguity by Means of Iterated Function Systems on Density Functions. *Discrete and Continuous Dynamical Systems Series B*, 26(11), pp. 5873-5903.
- LI, D., LA TORRE, D. et VRSCAY, E. (2021). The intensity-based measure approach to "Weberize" L2-based methods of signal and image approximation. *Optimization and Engineering*, 22, pp. 2321-2347.
- URBANIAK, I.A., KUNZE, A., LI, D., LA TORRE, D. et VRSCAY, E. (2021). The use of intensity-dependent weight functions to "Weberize" L2-based methods of signal and image approximation. *Optimization and Engineering*, 22, pp. 2349-2365.
- LA TORRE, D., LIUZZI, D. et MARSIGLIO, S. (2021). Transboundary pollution externalities: Think globally, act locally? *Journal of Mathematical Economics*, 96, pp. 102511.
- KHAN, F. et LA TORRE, D. (2021). Quantum information technology and innovation: a brief history; current state and future perspectives for business and management. *Technology Analysis and Strategic Management*, 33(11), pp. 1281-1289.
- KUNZE, H., LA TORRE, D. et GALÁN, M.R. (2021). Optimization methods in inverse problems and applications to science and engineering. *Optimization and Engineering*, 22(4), pp. 2151-2158.
- COLAPINTO, C., JAYARAMAN, R. et LA TORRE, D. (2020). A goal programming model to study the impact of R&D expenditures on sustainability-related criteria: the case of Kazakhstan. *Management Decision*, 58(11), pp. 2497-2512.
- LA TORRE, D. et MARSIGLIO, S. (2020). A note on optimal debt reduction policies. *Macroeconomic Dynamics*, 24(7), pp. 1850-1860.
- BEN ABDELAZIZ, F., COLAPINTO, C., LA TORRE, D. et LIUZZI, D. (2020). A Stochastic Dynamic Multiobjective Model for Sustainable Decision Making. *Annals of Operations Research*, 293, pp. 539-556.
- LA TORRE, D., MARCOUX, J., MENDIVIL, F. et VRSCAY, E. (2020). Denoising of diffusion magnetic resonance images using a modified and differentiable Monge-Kantorovich distance for measure-valued images. *Communications in Nonlinear Science and Numerical Simulation*, 91, pp. 105456.
- COLAPINTO, C., JAYARAMAN, R., BEN ABDELAZIZ, F. et LA TORRE, D. (2020). Environmental Sustainability and Multifaceted Development: Multi-Criteria Decision Models with Applications. *Annals of Operations Research*, 293, pp. 405-432.
- LA TORRE, D., BOUBAKER, S., PÉREZ GLADISH, B. et ZOPOUNIDIS, C. (2020). Multidimensional Finance, Insurance and Investment. *International Transactions in Operational Research*, 27(5), pp. 2689-2690.
- LA TORRE, D., MALIK, T. et MARSIGLIO, S. (2020). Optimal control of prevention and treatment in a basic macroeconomic-epidemiological model. *Mathematical Social Sciences*, 108, pp. 100-108.
- GARRALDA-GUILLEM, A.I., KUNZE, H., LA TORRE, D. et GALAN, M.R. (2020). Using the Generalized Collage Theorem for Estimating Unknown Parameters in Perturbed Mixed Variational Equations. *Communications in Nonlinear Science and Numerical Simulation*, 91, pp. 105433.
- SHAROMI, O., LA TORRE, D. et MALIK, T. (2019). A multiple criteria economic growth model with environmental quality and logistic population behaviour with variable carrying capacity. *INFOR*, 57(3), pp. 379-393.
- LA TORRE, D., MENDIVIL, F., MARSIGLIO, S. et PRIVILEGGI, F. (2019). A stochastic economic growth model with health capital and state-dependent probabilities. *Chaos, Solitons, and Fractals*, 129, pp. 81-93.
- BUCCI, A., LA TORRE, D., LIUZZI, D. et MARSIGLIO, S. (2019). Financial contagion and economic development: An epidemiological approach. *Journal of Economic Behavior and Organization*, 162, pp. 211-228.
- COLAPINTO, C., LA TORRE, D. et AOUNI, B. (2019). Goal programming for financial portfolio management: a state-of-the-art review. *Operational Research: An International Journal*, 19, pp. 717-736.
- LA TORRE, D., LIUZZI, D. et MARSIGLIO, S. (2019). Population and geography do matter for sustainable development. *Environment and Development Economics*, 24(2), pp. 201-223.
- VIE, A., COLAPINTO, C., LA TORRE, D. et LIUZZI, D. (2019). The long-run sustainability of the European Union countries: Assessing the Europe 2020 strategy through a fuzzy goal programming model. *Management Decision*, 57(2), pp. 523-542.

- LA TORRE, D., LIUZZI, D. et MARSIGLIO, S. (2019). The optimal population size under pollution and migration externalities: a spatial control approach. *Mathematical Modelling of Natural Phenomena*, 14(1), pp. 1-15.
- LA TORRE, D. et MARSIGLIO, S. (2018). Economic Growth and Abatement Activities in a Stochastic Environment: a Multi-Objective Approach. *Annals of Operations Research*, 267, pp. 321-334.
- LA TORRE, D., MARSIGLIO, S., MENDIVIL, F. et PRIVILEGGI, F. (2018). Fractal attractors and singular invariant measures in two-sector growth models with random factor shares. *Communications in Nonlinear Science and Numerical Simulation*, 58, pp. 185-201.
- LA TORRE, D., MARSIGLIO, S. et PRIVILEGGI, F. (2018). Fractal attractors in economic growth models with random pollution externalities. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 28(5).
- LA TORRE, D. et MENDIVIL, F. (2018). Portfolio optimization under partial uncertainty and incomplete information: a probability multimeasure-based approach. *Annals of Operations Research*, 267, pp. 267-279.
- LA TORRE, D. et MENDIVIL, F. (2018). Stochastic linear optimization under partial uncertainty and incomplete information using the notion of probability multimeasure. *Journal of the Operational Research Society*, 69(10), pp. 1549-1556.
- JAYARAMAN, R., COLAPINTO, C., LA TORRE, D. et MALIK, T. (2017). A Weighted Goal Programming model for planning sustainable development applied to Gulf Cooperation Council Countries. *Applied Energy*, 185(Part 2), pp. 1931-1939.
- LA TORRE, D. (2017). Preface: Multiple criteria optimization and goal programming in science, engineering, and social sciences. *Annals of Operations Research*, 251, pp. 1-5.
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- LA TORRE, D., LIUZZI, D. et MARSIGLIO, S. (2017). Pollution Control under Uncertainty and Sustainability Concern. *Environmental and Resource Economics*, 67, pp. 885-903.
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- ANITA, S., CAPASSO, V., KUNZE, H. et LA TORRE, D. (2015). Dynamics and control of an integro-differential system of geographical economics. *Annals of the Academy of Romanian Scientists: Series on Mathematics and its Applications*, 7(1), pp. 8-26.
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- JAYARAMAN, R., COLAPINTO, C., LA TORRE, D. et MALIK, T. (2015). Multi-criteria model for sustainable development using goal programming applied to the United Arab Emirates. *Energy Policy*, 87, pp. 447-454.
- JAYARAMAN, R., LA TORRE, D., MALIK, T. et PEARSON, Y. (2015). Optimal Work Force Allocation for Energy, Economic and Environmental Sustainability in the United Arab Emirates: A Goal Programming Approach. *Energy Procedia*, 75, pp. 2999-3006.

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