

ALLEGATO B

UNIVERSITÀ DEGLI STUDI DI MILANO

selezione pubblica per n.1 posto/i di Ricercatore a tempo determinato ai sensi dell'art.24, comma 3, lettera b) della Legge 240/2010 per il settore concorsuale 01/B1 Informatica, settore scientifico-disciplinare INF/01 Informatica presso il Dipartimento di INFORMATICA "GIOVANNI DEGLI ANTONI", (avviso bando pubblicato sulla G.U. n. 46 del 11/06/2021) Codice concorso 4766

[Francesco Trovò] CURRICULUM VITAE

INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	TROVÒ
NOME	FRANCESCO
DATA DI NASCITA	05, Luglio, 1986

TITOLI

TITOLO DI STUDIO

M.Sc. in Machine Learning and Data Mining, conseguita il 19/10/2011 presso la *Aalto University, School of Science and Technology*, Espoo, Finland, 4.47/5.

Thesis: Regret Estimation for Multi-Slot Incentive Compatible Multi-armed Bandit.

Supervisor: Prof. Erkki Oja, Prof. Alessandro Lazaric.

M.Sc. in Mathematical Engineering, conseguita il 20/12/2011 presso il *Politecnico di Milano, Dipartimento di Matematica*, Milano, Italy, 95/110.

Thesis: An Automated Mechanism Design Approach for Federated Search Engines.

Supervisor: Prof. Nicola Gatti.

B.Sc. in Mathematical Engineering, conseguita il 22/09/2008 presso il *Politecnico di Milano, Dipartimento di Matematica*, Milano, Italy, 105/110.

Thesis: Breve Introduzione alla Firma Digitale.

Supervisor: Prof. Alessandra Cherubini.

TITOLO DI DOTTORE DI RICERCA

Ph.D. in Information Technology, conseguita il 24/03/2015 presso il *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.

Topic: Machine Learning Techniques for Fault Detection, Isolation and Identification in Sensors/Actuators Networks.

Thesis: A Cognitive Fault Diagnosis System for Sensor Networks.

Supervisor: Prof. Manuel Roveri

CONTRATTI DI RICERCA, ASSEGNI DI RICERCA O EQUIVALENTI

04/2018 - 02/2020 **Research Assistant**, *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.

Contract type: Assegno di ricerca

04/2017 - 03/2018 **Research Assistant**, *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.

Contract type: Assegno di ricerca

04/2016 - 03/2017 **Research Assistant**, *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.

Contract type: post-doctoral research scholarship founded by Fondazione f.lli Confalonieri

04/2015 - 03/2016 **Research Assistant**, *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.
Contract type: Assegno di ricerca

ATTIVITÀ DIDATTICA A LIVELLO UNIVERSITARIO IN ITALIA O ALL'ESTERO

2020-Today **Lecturer of Online Learning and Monitoring**, *Ph.D. Course at Politecnico di Milano, Milano, Italy*. (10 hours per year)

In collaboration with Prof. G. Boracchi.

2018-Today **Lecturer of Informatica B**, *B.Sc. in Mechanical and Energy Engineering at Politecnico di Milano, Milano, Italy*. (>30 hours per year)

2018-2020 **Lecturer of Intelligenza Artificiale**, *M.Sc. in Computer Science Engineering at Università degli Studi di Bergamo, Bergamo, Italy*. (>30 hours per year)

2019-Today **Teaching assistant of Machine Learning for Networking**, *Passion in Action Course at Politecnico di Milano, Milano, Italy*. (>10 hours per year)

Prof. C.A. Redondi.

2016-Today **Teaching Assistant of Machine Learning**, *M.Sc. in Computer Engineering and Mathematical Engineering at Politecnico di Milano, Milano, Italy*. (>20 hours per year)

Prof. M. Restelli.

2014-2017 **Teaching Assistant of Informatica B**, *B.Sc. in Mechanical Engineering at Politecnico di Milano, Milano, Italy*. (>25 hours per year)

Prof. G. Boracchi.

DOCUMENTATA ATTIVITÀ DI FORMAZIONE O DI RICERCA PRESSO QUALIFICATI ISTITUTI ITALIANI O STRANIERI

03/2020 – Today **Assistant Professor**, *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.

Topic: Online Learning Techniques for Microeconomic Environments

04/2018 - 02/2020 **Research Assistant**, *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.

Topic: Sviluppo di tecniche multi-armed bandit per il pricing di biglietti aerei.

Project Leader: Prof. Marcello Restelli.

04/2017 - 03/2018 **Research Assistant**, *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.

Topic: Developing online learning techniques for digital economic scenarios.

Project Leader: Prof. Nicola Gatti.

04/2016 - 03/2017 **Research Assistant**, *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.

Topic: Development of Machine Learning Techniques for Security Games.

Tutor: Prof. Nicola Gatti.

04/2015 - 03/2016 **Research Assistant**, *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.

Topic: Flight Clustering Algorithms for Best Price Learning.

Project Leader: Prof. Nicola Gatti.

REALIZZAZIONE DI ATTIVITÀ PROGETTUALE

11/2020 - Today **SunBurn**, *RSE S.p.A.*, (30Ke foundings).

Topic: Fault diagnosis for solar panel systems.

Role: Co-Project Leader, application of fault diagnosis methods to identify and isolate the faults occurring in a solar panel plant.

Co-Project Leader: Prof. Marcello Restelli.

11/2020 - Today **BES 2**, *RSE S.p.A.*, (30K€ fundings).

Topic: Estimation of lithium-ion batteries state of charge for smart energy systems.

Role: Co-Project Leader, development of data-driven models to provide an accurate estimation of the battery degradation and to manage the battery usage profiles to slow down the battery ageing process.

Co-Project Leader: Prof. Marcello Restelli.

11/2019 - 10 - 2020 **BES**, *RSE S.p.A.*.

Topic: Estimation of lithium-ion batteries state of charge for smart energy systems.

Role: Senior research scientist, development of data-driven models able to providing an accurate estimation of the current state of a lithium-ion battery, relying on the current and voltage measurements provided on the operational life of the battery.

Project Leader: Prof. Marcello Restelli.

11/2019 - Today **HotelBid**, *AdsHotel*.

Topic: Development of an automatic bidding system for hotel advertisement.

Role: Senior research scientist, coordinating the experimental activities and the development of the algorithms for automatic bidding and segmentation of the ad market.

Project Leader: Prof. Nicola Gatti.

10/2018 - 04/2021 **SHARP**, *DoveVivo*.

Topic: Development of a pricing algorithm for long-term room rent.

Role: Research scientist, development of a model able to providing a pricing strategy basing on the features of the rooms, the neighbourhood, and dealing with seasonality effects.

Project Leaders: Prof. Nicola Gatti, Prof. Marcello Restelli.

09/2018 - 08/2020 **Aero**, *Ferrari SpA*.

Topic: Machine Learning Techniques for Aerodynamics Performance Optimization.

Role: Research scientist (topic details are not disclosed due to NDA).

Project Leaders: Prof. Marcello Restelli.

11/2016 - 10/2019 **Mediamatic**, *MMM Advertising*.

Topic: Development of an algorithm for assisting the humans to design more efficient advertisement campaigns.

Role: Research scientist, development of a user model able to capture the non-stationary nature of the phenomenon and application of reinforcement learning techniques to provide an approximated optimal planning of the campaign.

Project Leaders: Prof. Nicola Gatti, Prof. Marcello Restelli.

10/2016 - 02/2020 **Total Efficiency 4.0**, *Regione Lombardia*.

Topic: Development of a model to perform predictive maintenance in the context of smart manufacturing plants.

Role: Research scientist, developing techniques and models suited for the data provided by the different units of the industrial process. Coordinating the master theses activities.

Local Project Leader: Prof. Marcello Restelli.

11/2015 - 05/2017 **CyberFleet**, *Pirelli*.

Topic: Development of a model to predict the pressure deflation for truck tyres, to improve the tyres maintenance schedules.

Role: Research scientist, developing data preprocessing techniques and predictive models suited for the data provided by the available pressure sensors. Coordinating the master theses activities.

Local Project Leader: Prof. Marcello Restelli.

04/2015 - 02/2019 **Methamatics**, *Lastminute.com*.

Topic: Development of an algorithm for automatic pricing of flight tickets.

Role: Research scientist, developing new multi-armed bandit algorithms able to exploit the characteristics of the pricing scenario and new clustering algorithm to improve the optimal price learning process.

Project Leaders: Prof. Nicola Gatti, Prof. Marcello Restelli.

03/2013 - 08/2016 **Mpower**.

Topic: Design and implementation of a system able to predict a mobile device Time To Live (TTL), able to provide the user with suggestions on the optimal device configuration w.r.t. the desired TTL.

Role: Research scientist, developing new predictive models for energy consumption based on dynamic models (e.g., autoregressive with exogenous inputs). Coordinating the master theses activities.

Project Leader: Prof. Marco Domenico Santambrogio.

ORGANIZZAZIONE, DIREZIONE E COORDINAMENTO DI GRUPPI DI RICERCA NAZIONALI E INTERNAZIONALI, O PARTECIPAZIONE AGLI STESSI

08/2019 - Today **ALGADIMAR**, *MIUR*.

Topic: Development of new methods and tools in research areas that are critical to the understanding of digital markets.
Role: Research scientist, design of novel algorithmic game theory and machine learning tools for optimization in strategic settings.

Local Project Leader: Prof. Nicola Gatti.

01/2012 - 02/2014 **iSense (7th framework programme)**, *EU*.

Topic: Development of intelligent data processing methods for fault diagnosis.

Role: Research scientist, investigating computational intelligence approaches and algorithms to detect and diagnose faults in critical application scenarios such as water distribution networks and environmental monitoring systems.

Local Project Leader: Prof. Cesare Alippi.

ATTIVITÀ DI RELATORE A CONGRESSI E CONVEGNI NAZIONALI E INTERNAZIONALI

Seminar "Explainable regression and Classification" at the Osservatorio AI technical webinar series, Online, June 2021.

Seminar "From MAB to RL . . . and beyond!" at the AI meetup by MLModena, Online, January 2021

Seminar "Explainable regression and Classification" at the Osservatorio AI technical workshop series, Online, September 2020.

Talk "Learning Probably Approximately Correct Maximin Strategies in Simulation-Based Games with Infinite Strategy Spaces" at the International Conference on Autonomous Agent and Multi-Agent Systems, Online, May 2020.

Talk "Driving Exploration by Maximum Distribution in Gaussian Process Bandits" at the International Conference on Autonomous Agent and Multi-Agent Systems, Online, May 2020.

Talk "Dealing with Interdependencies and Uncertainty in Multi-Channel Advertising Campaigns Optimization" at the Markets, Algorithms, Prediction and LEarning (MAPLE) workshop, the Politecnico di Milano, Milano (IT), September 2019.

Talk "Improving Multi-Armed Bandit Algorithms" at the European Conference on Multi-Agent Systems, the University of Bergen, Bergen (NO), November 2018.

Talk "Online Joint Bid/Budget Optimization of Pay-per-click Advertising Campaigns" at the European Conference on Multi-Agent Systems, the University of Bergen, Bergen (NO), November 2018.

Talk "Online Follower's Behaviour Identification in Leadership Games" at the European Conference on Multi-Agent Systems, the University of Bergen, Bergen (NO), November 2018.

Talk "Online learning techniques for optimization of internet advertising campaigns" at the Permanent Itinerant Game Theory Seminars, the Politecnico di Milano, Milano (IT), November 2017.

Seminar "Online Learning Techniques for Pricing in e-Commerce Scenarios" at the University of Edinburgh Agent Group Reading Group, the University of Edinburgh, Edinburgh (UK), November 2016.

Demo "Fault Diagnosis in Environmental Monitoring demo" at the iSense final review meeting, STmicroelectronics, Agrate Brianza (Italy), February 2014.

Talk "MPower: Gain Back your Android Battery Life!", Northeastern University, Boston, MA (USA), May 2013.

Talk "MPower: Gain Back your Android Battery Life!" at Bilateral research exchange between MIT (USA) and the Politecnico di Milano, MIT, Boston, MA (USA), May 2013.

Talk "Cognitive Fault Diagnosis Systems: Identification and Dictionary Creation" at Bilateral research exchange between MIT (USA) and the Politecnico di Milano, MIT, Boston, MA (USA), May 2013.

Demo “Fault Diagnosis on iNemo Platform Demo” at the iSense review meeting, Universitat Politecnica de Catalunya, Barcelona (Spain), March 2013.

Talk “An Adapting, Model-free Fault Diagnosis Framework for Dynamic Systems” at the iSense 5th project meeting, STmicroelectronics, Agrate Brianza (Italy), October 2012.

Talk “A Learning from Models Cognitive Fault Diagnosis System” at the iSense 4th project meeting, The University of Birmingham, Birmingham (UK), May 2012.

TITOLI DI CUI ALL’ARTICOLO 24 COMMA 3 LETTERA A) E B) DELLA LEGGE 30 DICEMBRE 2010, N. 240

03/2020 – Today **Assistant Professor**, *Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria*, Milano, Italy.

Contract type: RTDA

ATTIVITA’ DI ORGANIZZAZIONE DI CONFERENZE E REFERRAGGIO PER CONFERENZE E RIVISTE SCIENTIFICHE

Organizing Member

Workflow Chair for AISTATS 2020, International Conference on Artificial Intelligence and Statistics.

Committee Member

AISTATS 2021 (PC), International Conference on Artificial Intelligence and Statistics.

ICLR 2021 (PC), International Conference on Learning Representations.

NeurIPS 2020 – 2021 (PC), Conference on Neural Information Processing Systems.

AAMAS 2019 (PC), International Conference on Autonomous Agents and Multiagent Systems.

AAAI 2017 – 2021 (PC), Conference on Artificial Intelligence.

IJCAI 2017 – 2021 (PC), International Conference on Artificial Intelligence.

IJCNN 2017 – 2019 (PC), IEEE International Joint Conference on Neural Networks.

ICANN 2014 (TPC), International Conference on Artificial Neural Networks.

Referee EANN 2017 – 2019, International Conference on Engineering Applications of Neural Networks.

AAMAS 2016–2017, International Conference on Autonomous Agents and Multiagent Systems.

AAAI 2015, Conference on Artificial Intelligence.

ICAISC 2015, International Conference on Artificial Intelligence and Soft Computing.

IEEE SPICE 2015, International Conference on Signal Processing, Informatics, Communication and Energy Systems.

IJCNN 2014 – 2016, IEEE International Joint Conference on Neural Networks.

SSCI 2014, 2016, IEEE Symposium Series on Computational Intelligence.

ICANN 2014, 2017, International Conference on Artificial Neural Networks.

AIAI 2013 – 2014, 2018, International Conference on Artificial Intelligence Applications & Innovations.

CICIP 2013, International Conference on Intelligent Control and Information Processing.

Journal referee

Journals Artificial Intelligence.

Journal of Artificial Intelligence Research.

IEEE Transactions on Neural Networks and Learning Systems.

IEEE Transactions on Emerging Topics in Computational Intelligence.

IEEE Computational Intelligence Magazine.

Adaptive Behavior.

Neural Networks.

Neural Computing and Applications.

Evolving Systems.

Frontiers in Oncology.

TRASFERIMENTO TECNOLOGICO

Cofounder and Scientific Advisor of MLcube: spin-off from Politecnico di Milano bridging the gap between the academic applied research on Machine Learning, Reinforcement Learning, and Online Learning and their application

in the industrial world. The MLCube goal is to provide a set of techniques allowing data-driven algorithms to maintain themselves, without a constant action from the data scientist.

Products:

-AdOpt: platform to optimize the budget spending for internet multi-platform advertising

-MLCube Platform: platform to supervise and retrain up-to-date Machine Learning applications, by monitoring their performance

SUPERVISIONE DI TESI DI DOTTORATO E LAUREA SPECIALISTICA

Phd Thesis co-Supervisor

A. Nuara, "Machine learning algorithms for the optimization of internet advertising campaigns", 2021.

Master thesis supervisor

A. Agostini, "Multi-armed bandit with persistent reward", 2021.

G. Re, "REC-NS-MAB: an algorithm for Recurrent Concepts in Non-stationary Multi-armed Bandits", 2021.

M. Bernasconi de Luca, "Online gradient descent for online portfolio optimization with transaction costs", 2020.

Master thesis Cosupervisor

L. Casalini, "Algorithm to find the equilibrium point in missile-ship simulator-based game",

Supervisor: Prof. N. Gatti, 2021.

G.M. Gianola, "Development of machine learning algorithms for long-term room rentals pricing",

Supervisor: Prof. N. Gatti, 2020.

G. Spadaro, "Online bid optimization with return-on-investment constraints", Supervisor:

Prof. N. Gatti, 2020.

I. Battaini, "Price-advertising", Supervisor: Prof. N. Gatti, 2020.

D. Crippa, "Exploiting maximum distribution to drive exploration in Gaussian process bandits",

Supervisor: Prof. N. Gatti, 2020.

M. Perfetto, "Ads content optimization for Internet advertising campaigns", Supervisor:

Prof. N. Gatti, 2020.

M. Maffioli, "Dealing with partial information in follower's behavior identification", Supervisor:

Prof. M. Restelli, 2019.

E. Kulatu, "Exploiting temporal dependencies to predict the revenue of flight tickets", Supervisor:

Prof. M. Restelli, 2019.

M. Mussi, "Improving aerodynamic load estimation algorithms for F1 racing cars, Supervisor:

Prof. M. Restelli, 2019.

G. Gregori, "Optimizing wind tunnel experiments to minimize the uncertainty of laptime estimation for F1 cars",

Supervisor: Prof. M. Restelli, 2019.

A. Lavelli, "Feature selection for aerodynamic load estimation from pressure measurements for F1 racing cars",

Supervisor: Prof. M. Restelli, 2019.

A. Mongelluzzo, "A data-driven approach to detect faults in the tire building process", Supervisor:

Prof. M. Restelli, 2019.

L. Scannapieco, "Stochastic multi-armed bandit with switching costs : an empirical analysis",

Supervisor: Prof. M. Restelli, 2018.

M.C. Zaccardi, N. Sosio, "Exploiting channels interdependence in Internet advertising campaigns optimization",

Supervisor: Prof. M. Restelli, 2018.

F. Chiusano, "Breakpoint prediction for the abruptly-changing non-stationary multi-armed bandit problem",

Supervisor: Prof. M. Restelli, 2018.

N. Montali "Machine Learning approaches to increase production efficiency: an Industry 4.0 case", Supervisor: Prof.

M. Restelli, 2018.

M. Di Napoli, "Multi-asset trading with reinforcement learning : an application to magic the gathering online",

Supervisor: Prof. M. Restelli, 2018.

G.M. Accabi, "A bandit algorithm for the joint optimization of budgets in an online advertising context", Supervisor:

Prof. M. Restelli, 2017.

M. Gasparini, "Learning from logged bandit feedback techniques for targeting optimization of online advertising",

Supervisor: Prof. N. Gatti, 2017.

D. Pensa, "Integration of GPS data into predictive models for tyre maintenance", Supervisor:

Prof. M. Restelli, 2017.

G. Corradini, "Online Learning with Risk Averse Tree in Non-stationary Environments", Supervisor:

Prof. M. Restelli, 2017.

L. Bisi, "Regret minimization algorithms for the follower's behavior identification in leadership games", Supervisor: Prof. M. Restelli, 2017.

E.M. Italia, "Optimization of digital advertising campaigns in non-stationary environments through a reinforcement learning algorithm", Supervisor: Prof. N. Gatti, 2017.

A. Salmoiraghi, "Analysis of the cold start problem in predictive algorithms for cyber tyres", Supervisor: Prof. M. Restelli, 2017.

F. Di Lorenzo, "Factored approaches for high dimensional multi-armed bandits", Supervisor: Prof. M. Restelli, 2017.

D. Mapelli, D. Enerli, "Bayesian learning for flight tickets pricing with performance-based bonus", Supervisor: Prof. M. Restelli, 2017.

Prof. M. Restelli, 2016.

P. Fusari, F. Marocco, "A data-driven predictive model for tyre maintenance", Supervisor: Prof. M. Restelli, 2016.

B. Kotevska, K. Kosturanov, "Multi-armed bandit algorithms for pricing in e-commerce", Supervisor: Prof. N. Gatti, 2016.

Z. Nechovski, "Estimation of costs and revenues based on online travel agencies' historical data", Supervisor: Prof. M. Restelli, 2016.

A. Damiani, A. Corna, "A scalable framework for resource consumption modelling: the MARC approach", Supervisor: Prof. M.D. Santambrogio, 2016.

P. Serena, "ThermoSense: a complaint-based approach for thermal comfort control in indoor environments", Supervisor: Prof. M.D. Santambrogio, 2016.

E. Gargano, M.A. Nosedà, "Pricing online di biglietti aerei: analisi strategica delle online travel agency in dominio metasearch", Supervisor: Prof. N. Gatti, 2015.

A. Sgarro, "Exploiting monotonicity in continuum and multi armed bandit: the pricing scenario", Supervisor: Prof. M. Restelli, 2015.

G. Rumi, "Definizione e sviluppo di metodologie per la gestione dei consumi energetici nei dispositivi mobili", Supervisor: Prof. M.D. Santambrogio, 2015.

A. Cazzola, "MModel : automatic generation of mobile devices power models based on user provided data", Supervisor: Prof. M.D. Santambrogio, 2014.

M. Ferroni, A. Cazzola, "Mpower: on how to effectively predict the time to live for mobile devices", Supervisor: Prof. M.D. Santambrogio, 2013.

PRODUZIONE SCIENTIFICA

PUBBLICAZIONI SCIENTIFICHE

Journals

[J8] F. Trovò, S. Paladino, M. Restelli, N. Gatti, "Sliding-Window Thompson Sampling for Non-Stationary Settings", *Journal of Artificial Intelligence Research*, AI Access Foundation, 2020, Volume 68, pp 311–364 (DOI: 10.1613/jair.1.11407).

[J7] A. Prelaj, C. Proto, G. Lo Russo, D. Signorelli, R. Ferrara, M. Mensah, G. Galli, A. De Toma, G. Viscardi, M. Brambilla, R. Lobefaro, B. Trevisan, F. Trovò, V. Torri, G. Sozzi, M.C. Garassino, M. Boeri, "Integrating clinical and biological prognostic biomarkers in patients with advanced NSCLC treated with immunotherapy: the DEMo score system", *Translational Lung Cancer Research*, AME Publishing Company, 2020, Volume 9(3), pp 617–628 (DOI: 10.21037/tlcr-20-231).

[J6] F. Trovò, S. Paladino, M. Restelli, N. Gatti, "Improving Multi-armed Bandit Algorithms in Online Pricing Settings", *International Journal of Approximate Reasoning*, Elsevier, 2018, Volume 98, pp 196–235 (DOI: 10.1016/j.ijar.2018.04.006).

[J5] M. Roveri, F. Trovò, "An Ensemble Approach for Cognitive Fault Detection and Isolation in Sensor Networks", *International Journal of Neural Systems*, World Scientific, 2017, Volume 27(3), pp 1–16 (DOI: 10.1142/S0129065716500477).

[J4] M.A. Cugueró-Escofet, J. Quevedo, C. Alippi, M. Roveri, V. Puig, D. García, F. Trovò, "Model-vs. Data-Based Approaches Applied to Fault Diagnosis in Potable Water Supply Networks", *Journal of Hydroinformatics*, 2016, IWA Publishing, Volume 18(5), pp 831–850 (DOI: 10.2166/hydro.2016.218).

- [J3] N. Gatti, A. Lazaric, M. Rocco, F. Trovò, "Truthful Learning Mechanisms for Multi-Slot Sponsored Search Auctions with Externalities", *Artificial Intelligence*, Elsevier, 2015, Volume 227, pp 93–139 (DOI: 10.1016/j.artint.2015.05.012).
- [J2] C. Alippi, M. Roveri, F. Trovò, "A Self-Building and Cluster-Based Cognitive Fault Diagnosis System for Sensor Networks", *IEEE Transactions on Neural Networks and Learning Systems*, 2014, Volume 25(64), pp 1021–1032 (DOI: 10.1109/TNNLS.2014.2303651).
- [J1] A.A. Nacci, F. Trovò, F. Maggi, M. Ferroni, A. Cazzola, D. Sciuto, M.D. Santambrogio, "Adaptive and Flexible Smartphone Power Modeling", *Mobile Networks and Applications*, Springer US, 2013, Volume 18(5), pp 600–609 (DOI: 10.1007/s11036-013-0470-y).

Conferences

- [C20] E. Vittori, M. Bernasconi de Luca, F. Trovò, M. Restelli, "Conservative Online Convex Optimization", *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)*, 2021 (Accepted).
- [C19] G. Re, F. Chiusano, F. Trovò, D. Carrera, G. Boracchi, M. Restelli, "Exploiting History Data for Nonstationary Multi-armed Bandit", *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)*, 2021 (Accepted).
- [C18] E. Vittori, M. Bernasconi de Luca, F. Trovò, M. Restelli, "Dealing with Transaction Costs in Portfolio Optimization: Online Gradient Descent with Momentum", *ACM International Conference on Artificial Intelligence in Finance (ICAIF)*, 2020.
- [C17] A. Marchesi, F. Trovò, N. Gatti, "Learning Probably Approximately Correct Maximin Strategies in Simulation-Based Games with Infinite Strategy Spaces", *proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2020, pp 834–842 (DOI: 10.5555/3398761.3398860).
- [C16] A. Nuara, F. Trovò, D. Crippa, N. Gatti, M. Restelli, "Driving Exploration by Maximum Distribution in Gaussian Process Bandits", *proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2020, pp 948–956 (DOI: 10.5555/3398761.3398872).
- [C15] A. Nuara, N. Sosio, F. Trovò, M.C. Zaccardi, N. Gatti, M. Restelli, "Dealing with Interdependencies and Uncertainty in Multi-Channel Advertising Campaigns Optimization", *The Web Conference (WWW)*, 2019, pp 1376–1386 (DOI: 10.1145/3308558.3313470).
- [C14] A. Nuara, F. Trovò, N. Gatti, M. Restelli, "Online Joint Bid/Budget Optimization of Pay-per-click Advertising Campaigns", *European Conference on Multi-agent Systems (EUMAS)*, 2018.
- [C13] L. Bisi, G. De Nittis, F. Trovò, M. Restelli, N. Gatti, "Online Follower's Behaviour Identification in Leadership Games", *European Conference on Multi-agent Systems (EUMAS)*, 2018.
- [C12] F. Trovò, S. Paladino, M. Restelli, N. Gatti, "Improving Multi-Armed Bandit Algorithms for Pricing", *European Conference on Multi-agent Systems (EUMAS)*, 2018.
- [C11] M. Gasparini, A. Nuara, F. Trovò, N. Gatti, M. Restelli, "Targeting Optimization for Internet Advertising by Learning from Logged Bandit Feedback", *proceedings of the International Joint Conference on Neural Networks (IJCNN)*, 2018, pp 1–8 (DOI: 10.1109/IJCNN.2018.8489092).
- [C10] A. Nuara, F. Trovò, N. Gatti, M. Restelli, "A Combinatorial-Bandit Algorithm for the Online Joint Bid/Budget Optimization of Pay-per-Click Advertising Campaigns", *proceedings of the Conference on Artificial Intelligence (AAAI)*, 2018, pp 2379–2386.
- [C9] L. Bisi, G. De Nittis, F. Trovò, M. Restelli, N. Gatti, "Regret Minimization Algorithms for the Follower's Behaviour Identification in Leadership Games", *proceedings of the Conference on Uncertainty in Artificial Intelligence (UAI)*, 2017, pp 1–10.
- [C8] F. Trovò, S. Paladino, P. Simone, M. Restelli, N. Gatti, "Risk-averse Trees for Learning from Logged Bandit Feedback", *proceedings of the International Joint Conference on Neural Networks (IJCNN)*, 2017, pp 976–983 (DOI: 10.1109/IJCNN.2017.7965958).
- [C7] S. Paladino, F. Trovò, M. Restelli, N. Gatti, "Unimodal Thompson Sampling for Graph- Structured Arms", *proceedings of the Conference on Artificial Intelligence (AAAI)*, 2017, pp 2457–2463 (DOI: 10.5555/3298483.3298593).
- [C6] F. Trovò, S. Paladino, M. Restelli, N. Gatti, "Budgeted Multi-armed Bandit in Continuous Action Space", *proceedings of the European Conference on Artificial Intelligence (ECAI)*, 2016 (DOI: 10.3233/978-1-61499-672-9-560).
- [C5] M. Roveri, F. Trovò, "An Ensemble of HMMs for Cognitive Fault Detection in Distributed Sensor Networks", *proceedings of the International Conference on Artificial Intelligence Applications and Innovations (AIAI)*, 2014, 90–100 (DOI: 10.1007/978-3-662-44654-6_9).

- [C4] M. Ferroni, A. Cazzola, F. Trovò, D. Sciuto, M.D. Santambrogio, "On Power and Energy Consumption Modeling for Smart Mobile Devices", proceedings of the IEEE International Conference on Embedded and Ubiquitous Computing (EUC), 2014 (DOI: 10.1109/EUC.2014.47).
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Data

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