

Andrea Passerini

Curriculum Vitae

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Address: Department of Information Engineering and Computer Science (DISI), University of Trento
Via Sommarive 9, POVO 38123 TN, Italy
Phone: +39 0461 28 5224
Email: andrea.passerini@unitn.it
WWW: <http://www.disi.unitn.it/~passerini>

Academic Positions

- 2024– **Full Professor in area 01/B1**, Department of Information Engineering and Computer Science, University of Trento.
- 2015–2024 **Associate Professor in area 01/B1**, Department of Information Engineering and Computer Science, University of Trento.
- 2018–2023 **Adjunct Professor** at Aalborg University (from 01/06/2018 to 31/05/2023).
- 2009–2015 **Assistant Professor (Ricercatore a Tempo Determinato - Tipo A) SSD INF/01**, Department of Information Engineering and Computer Science, University of Trento.
- 2008–2009 **Visiting Professor**, Department of Information Engineering and Computer Science, University of Trento.
- 2004–2008 **Research Associate (assegnista di ricerca)**, Dipartimento di Sistemi e Informatica, University of Florence.

Education and Qualifications

- 2020, 13 Nov **Italian national scientific qualification (ASN) for full professor in area 09/H1** (2018 call).
- 2018, 28 Mar **Italian national scientific qualification (ASN) for full professor in area 01/B1** (2016 call).
- 2014, 29 Jan **Italian national scientific qualification (ASN) for associate professor in area 01/B1** (2012 call).
- 2013, 3 Dic **Italian national scientific qualification (ASN) for associate professor in area 09/H1** (2012 call).
- 2004, 21 May **PhD in Computer Engineering**, DSI - University of Florence. Dissertation title: “*Kernel Methods, Multiclass Classification and Applications to Computational Molecular Biology*”.
- 2000, 6 Nov **Master of Science in Computer Engineering** (110/110 cum laude), University of Florence. Dissertation title: “*Tecniche di apprendimento automatico applicate al recupero di informazione da Internet*”.

Research projects

- 2023–2027 *TANGO - It takes two to tango: a synergistic approach to human-machine decision making*
HORIZON-RIA-EUROPE, 7M€, 21 partners
Role: Project Coordinator.
- 2023–2026 *Future Artificial Intelligence Research (FAIR)*
PNRR project funded by the NextGenerationEU
Role: Task leader.

- 2020–2024 *TAILOR: Foundations of Trustworthy AI - Integrating Reasoning, Learning and Optimization*
H2020-RIA, 12M€, 54 partners.
Role: Principal Investigator.
- 2019–2022 *WeNet - The Internet of US*
FET-PROACTIVE grant from the European Commission, 6.6M€, 15 partners.
Role: Participant.
- 2015–2017 *The Trentino Knowledge Base*
CARITRO Project financed by the Caritro foundation
Role: Scientific Coordinator.
- 2011–2013 *Apprendimento Statistico Relazionale e Reactive Search Optimization*
PRIN grant from the Italian Ministry of Education, Universities and Research
Role: Participant.
- 2008–2012 *A-CUBE: Ambient Aware Assistance*
“**Grand Projects**” grant from the Autonomous Province of Trento
Role: Participant.
- 2004–2006 *April II: Applications of Probabilistic Inductive Logic Programming*
STREP grant from the European Commission
Role: Participant.
- 2002–2003 *Strumenti basati su apprendimento automatico per la genomica strutturale e funzionale*
PRIN grant from the Italian Ministry of Education, Universities and Research
Role: Participant.

Industrial projects

- 2023–2023 *Contratto conto terzi nell’ambito del progetto INDACO*
Conto Terzi, Social IT Srl, 7K€.
- 2022–2023 *Contratto conto terzi nell’ambito del progetto INDACO*
Conto Terzi, Real Web Srl, 7K€.
- 2022–2023 *Contratto conto terzi nell’ambito del progetto INDACO*
Conto Terzi, Okkam Srl, 18K€.
- 2018–2019 *Sistema di OCR per l’estrazione di dati da fotografie di documenti d’identità*
Conto Terzi, YourVoice SpA, 20K€

Main research activities

Research topics My research activity lies at the intersection of machine learning, automated reasoning and human cognition. I have a proven track record of publications in top-tier ML and AI venues, with a focus on neuro-symbolic integration, learning and reasoning, interactive machine learning, preference elicitation, explainable AI, learning and optimization and learning with constraints, with applications to recommender systems and bioinformatics.

Impact and leadership I am coordinator of the “Deep and Structured Machine Learning” research program (<http://www.disi.unitn.it/research/programs/dsml>) and director of the “Structured Machine Learning” group (<http://sml.disi.unitn.it/>), which currently includes 10 PhD students, two assistant professors (RTDAs), and one postdoctoral researcher. I co-authored over 170 refereed papers, including more than sixty journal publications and five invited book chapters. My h-index is 35 (Google Scholar, September 2024, https://scholar.google.it/citations?hl=it&user=IIXgkLoAAAAJ&view_op=list_works).

Main research collaborations (outside host Departments)

- 2022– *Explainability in Graph Neural Networks* [11, 72]
Pietro Liò, University of Cambridge, UK.
- 2020– *Continual Learning* [78, 84, 139, 145]
Simone Calderara, University of Modena e Reggio Emilia.
- 2018– *Machine and Human Reasoning* [73, 9, 20, 97]
Katya Tentori, CIMeC, University of Trento.
- 2017– *Hybrid Intelligence, Network Analysis* [6, 3, 8, 14, 21, 30]
Bruno Lepri, FBK.
- 2015– *Constructive recommendations* [6, 74, 106, 110]
Paolo Viappiani, Lip6, CNRS, France.
- 2015– *Learning and inference in hybrid domains* [64, 107, 112, 111]
Guy Van den Broeck, UCLA, USA.
Vaishak Belle, University of Edinburgh, UK.
- 2010– *Discovering translational regulation mechanisms* [35, 36, 39, 45]
Alessandro Quattrone, Centre for Integrative Biology (CIBIO), University of Trento.
Gabriella Viero, Istituto di Biofisica - CNR Trento.
- 2006– *Learning in relational domains* [24, 43, 47, 124, 125, 164]
Manfred Jaeger, Institut for Datalogi, Aalborg Universitet, Denmark.
- 2004– *Hybrid approaches combining statistical and relational learning* [96, 102, 103, 52, 59, 127, 169]
Luc De Raedt, Declarative Languages and Artificial Intelligence, Katholieke Universiteit Leuven, Belgium.
- 2004–2012 *Learning algorithms for protein feature prediction* [49, 54, 60, 119]
Burkhard Rost, Bioinformatic and Computational Biology Departement, Technische Universitaet Muenchen, Germany.
- 2005–2007 *Learning algorithms for metal binding site prediction* [57, 128]
Ivano Bertini, Magnetic Resonance Center (CERM), University of Florence.
- 2005–2006 *Declarative kernels* [168]
Stephen Muggleton, Computational Bioinformatics Laboratory, Imperial College London, UK.

Awards

- **Best working paper award** at the *Hybrid Human Artificial Intelligence (HHAI)*, 2023.
- **Best blu sky ideas paper** at the *AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, 2021.
- **Best paper award** at the *Conference on Uncertainty in Artificial Intelligence (UAI)*, Amsterdam, 2015.
- **Google Faculty Research Award** on *Protein Function Prediction by Statistical Relational Learning*, 35K€, 2014.
- **Ribomaps: learning translational regulation mechanisms by computational approaches**, NVIDIA's Academic Hardware grant, 2014.
- **Best paper award** at the *Metaheuristics International Conference (MIC 2013)*, Singapore, 2013.

Invited Talks (recent)

- Plenary talk: *Interactive Machine Learning*, at the International Symposium on Methodologies for Intelligent Systems (ISMIS 2022), Cosenza, Italy, 2022.
- Plenary talk: *Constructive Preference Elicitation: from Product Bundling to Algorithmic Recourse* at the 13th Multidisciplinary Workshop on Advances in Preference Handling (M-PREF 2022), Workshop at IJCAI-ECAI, Vienna, Austria, 2022.
- Plenary talk: *Constructive Preference Elicitation* at the 12th Multidisciplinary Workshop on Advances in Preference Handling (M-PREF 2020), Workshop at ECAI, Santiago de Compostela, Spain, 2020.
- Plenary talk: *Constructive Machine Learning*, at the Workshop on "Integrative Machine Learning", Satellite Workshop at the 6th International Conference on Machine Learning, Optimization & Data Science, Certosa di Pontignano, Siena, Italy, 2020
- Seminar talk: *Learning and Reasoning in Hybrid Domains* at Spring AI Seminars, FBK, Italy, 2020.
- Workshop talk: *Interactive Machine Learning* at Spring workshop on Mining and Learning, Titisee, Germany, 2020.
- Plenary talk: *On the combination of knowledge and learning*, at the 12th International Conference on Knowledge Science, Engineering and Management (KSEM 2019), Athens, Greece, 2019.
- Workshop talk: *Constructive Recommender Systems* at the Next Generation Recommenders Workshop, Mountain View, USA, 2019.
- Lab seminar: *Constructive Machine Learning* at Dipartimento di Informatica - Scienza e Ingegneria, University of Bologna, Italy, 2019.
- Plenary talk: *Constructive Preference Elicitation* at the Fourth workshop on From Multiple Criteria Decision Aid to Preference Learning (DA2PL), Poznan, Poland, 2018.
- Plenary talk: *Interactive Machine Learning* at the Seventh Italian Workshop on Machine Learning and Data Mining, Trento, 2018.
- Seminar talk: *Pyconstruct: a library for declarative, constructive machine learning* at Dagstuhl Seminar on Automating Data Science, Schloss Dagstuhl, Germany, 2018.
- Workshop talk: *Coactive Learning for Constructive Recommendation* at Spring workshop on Mining and Learning, Titisee, Germany, 2018.
- Summer school talk: *Inference and Learning with Bayesian Networks* at Summer School of Information Engineering, Bressanone, Italy, 2017.
- Workshop talk: *Constructive Preference Elicitation* at Spring workshop on Mining and Learning, Ostend, Belgium, 2017.
- Plenary talk: *Learning Modulo Theory - Reasoning and Learning in Hybrid Domains* at the Eleventh International Workshop on Neural-Symbolic Learning and Reasoning (NeSy'16), New York City, USA, 2016.
- Lab seminar: *Learning modulo theories* at Decision, Intelligent Systems and Operational Research Department, LIP6, Paris, 2016.
- Workshop talk: *Learning and Reasoning in Hybrid Domains* at Spring workshop on Mining and Learning, Dinant, Belgium, 2015.
- Plenary talk: *Introduction to Machine Learning* at CP-AI-OR, Cork, Ireland, 2014.
- Seminar talk: *Structured learning modulo theories* at Dagstuhl Seminar on Constraints, Optimization and Data, Schloss Dagstuhl, Germany, 2014.

- Workshop talk: *Learning modulo theories* at Spring workshop on Mining and Learning, Odensee, Belgium, 2014.
- Lab seminar: *Learning to Solve Unknown Constraint Satisfaction Problems* at Computational Aspects of Mining and Learning Group, Fraunhofer IAIS, Bonn, Germany, 2012.
- Workshop talk: *Learning to Solve Unknown Constraint Satisfaction Problems* at First Italian Workshop on Machine Learning and Data Mining, Rome, 2012.
- Workshop talk: *Learning to solve unknown constraint satisfaction problems* at Spring workshop on Mining and Learning, Bad Neuenahr, Germany, 2012.
- Lab seminar: *Towards combining statistical and symbolic learning: a kernel approach* at Department of Mathematics and Computer Science, Università degli Studi di Palermo, Italy, 2011.
- Symposium talk: *Frankenstein Junior: a Relational Learning Approach toward Protein Engineering* at symposium on Machine Learning in Life Sciences, Leuven, Belgium, 2011.
- Lab seminar: *Predicting structured-output from protein sequence* at Machine learning group, Université Libre de Bruxelles, Belgium, 2011.
- Workshop talk: *On combining learning and heuristic optimization* at Spring workshop on Mining and Learning, Prum, Germany, 2011.
- Lab seminar: *Predicting structural and functional sites in proteins by searching for maximum-weight cliques* at Databases and Theoretical Computer Science Research Group, Hasselt University, Belgium, 2010.
- Plenary talk: *Predicting structural and functional sites in proteins* at 5th Bioptrain Workshop, Florence, 2009.

Teaching activities

- 2021– Teacher of *Advanced Topics in Machine Learning and Optimization* (6 CFU), Master of Science in Artificial Intelligent Systems, University of Trento (with Stefano Teso).
- 2020– Teacher of *Machine Learning* (12 CFU), Master of Science in Artificial Intelligent Systems, University of Trento (with Farid Melgani and Elisa Ricci).
- 2019– Teacher of *Scientific Programming* (6 CFU), Master of Science in Quantitative and Computational Biology, University of Trento.
- 2008– Teacher of *Machine Learning* (6 CFU), Master of Science in Computer Science, University of Trento.
- 2019–2020 Teacher of *Informatica* (6 CFU), Bachelor of Science in Biomolecular Sciences and Technology, University of Trento.
- 2009–2019 Teacher of *Bioinformatics*, Doctoral Course in Biomolecular Sciences, University of Trento.
- 2008–2019 Teacher of *Informatica* (9 CFU), Bachelor of Science in Biomolecular Sciences and Technology, University of Trento.
- 2009–2013 Teacher of *Statistical Relational Learning* (3 CFU), Doctoral Course in Information and Communication Technology, University of Trento.
- 2008–2009 Teacher of *Complex Systems* (3 CFU), Doctoral Course in Information and Communication Technology, University of Trento.

2006–2008 Teacher of *Conoscenze informatiche e relazionali* (4 CFU), Bachelor of Science in Scienze dell'Ingegneria Edile, University of Florence.

Supervised PhD students

- 2023– Marco Vincenzo De Luca, *AI Coaching for Surgical Teams*.
- 2023– Erich Robbi, *Hybrid Surgical Decision Making*.
- 2023– Steve Azzolin *Neuro-Symbolic GNNs*.
- 2023– Samuele Bortolotti (co-advisor), *Interpretable Neural Networks*.
- 2023– Cesare Barbera, *Hybrid Human-Machine learning and Decision Making*.
- 2022– Debodeep Banerjee, *Learning to Guide Humans*.
- 2022– Francesco Ferrini, *Multi-Relational Learning*.
- 2022– Marco Bronzini, *Machine Learning for Sustainable Finance*.
- 2021– Emanuele Marconato, *Concept-Based Models*.
- 2021– Giovanni De Toni (co-advisor), *Algorithmic recourse*.
- 2019–2023 Gianluca Apriceno (co-advisor), *Neural Event Calculus*.
- 2019–2023 Antonio Longa (co-advisor), *Computational Social Science*.
- 2019–2023 Alessia Bertugli, *Human-like Machine Learning*.
- 2017–2021 Luca Erculiani, *Human-like Machine Learning*.
- 2017–2021 Giovanni Pellegrini, *Statistical Relational Learning approaches for Recommender Systems*.
- 2016–2020 Paolo Morettin, *Learning and Inference with Constraints*.
- 2015–2019 Paolo Dragone, *Coactive Learning Algorithms for Constructive Preference Elicitation*.
- 2016–2017 Seyed Mostafa Kia, *Brain Decoding for Brain Mapping*.
- 2014–2017 Gianluca Corrado, *Machine Learning for Investigating Post-Transcriptional Regulation of Gene Expression*.
- 2012–2015 Daniil Mirylenka, *Academic Search Refinement and Ontology Learning*.
- 2010–2013 Umut Avci, *Recognizing and Discovering Activities of Daily Living in Smart Environments*.
- 2010–2013 Stefano Teso, *Statistical Relational Learning for Proteomics: Function, Interactions, Evolution*.
- 2008–2010 Elisa Cilia, *Statistical and relational learning for understanding enzyme function*.

Supervised Master students

- 2023 Luna Pianesi, *GNNs and xai for a new aurora kinase inhibitor*
- 2023 Matyas Vincze, *Modular non-autoregressive trajectory prediction*
- 2023 Emma Benedetti, *Strategy-robust recourse models through performative prediction*

- 2023 Taylor Lucero, *Evaluating the interpretability of xai techniques across image, text, and tabular data*
- 2023 Gaia Trebucchi, *Generating temporal graphs via labeled egocentric temporal neighborhoods*
- 2023 Erich Robbi, *AI-enhanced decision making for surgical intervention in abdominal aortic aneurysm*
- 2023 Enrico Cappuzzo, *Deep learning for apple position estimation*
- 2023 Raffaele Pojer, *Neuro-symbolic integration for learning and reasoning about graph data*
- 2023 Steve Azzolin, *Global explainability of gnns via learned logic formulas*
- 2023 Gabriele Ghisleni, *Learning, debugging and deploying nlp classifiers for sustainable development goals*
- 2023 Olga Zaghen, *Nonlinear sheaf diffusion in graph neural networks*
- 2023 Alessandro Grassi, *Early warning system for desert locust infestations in the horn of africa: a machine learning approach*
- 2023 Samuele Bortolotti, *From models to arguments and back: a multi-shot interactive debugging protocol*
- 2023 Elsa Lopez Perez, *Reinforcement learning solutions for real-world multi-robot navigation simulations*
- 2023 Vincenzo Marco de Luca, *Regularize learning in graph neural networks through explainability*
- 2022 Cesare Barbera, *Exploiting impact versus posterior probability in machine learning: an exploratory study*
- 2022 Gabor Vitrai, *Multilingual address extraction from websites*
- 2022 Cristiana Lalletti, *Dealing with confounders in explanation-based drift detection*
- 2022 Francesco Ferrini, *Learning metapath gnn*
- 2022 Omid Jadidi, *Deep learning explanation correction for classification and localization of covid-19 markers in point-of-care lung ultrasound*
- 2022 Marco Bronzini, *Anomaly detection and predictive maintenance for photovoltaic systems in a real case scenario*
- 2021 Giovanni Pellegrini, *Relational Learning approaches for Recommender Systems*
- 2021 Emma Busarello, *Towards understanding amyotrophic lateral sclerosis from mice to patients by an integrative and multilevel approach*
- 2021 Fabio Taddei dalla Torre, *High-resolution sym-h data prediction using deep learning for geomagnetic storm forecasting*
- 2021 Stefano Branchi, *Leveraging reinforcement learning for recommending next activities in business processes*
- 2021 Omar Coser, *Identifying ribosome patterns in mammalian polysomes through the subgraph matching algorithm*
- 2021 Francesco Maria Marrone, *Deep Learning for Covid-19 Diagnosis: Learning from Explanations to Output Better Explanations.*
- 2020 Edoardo Battocchio, *A Modular Architecture for Deep Structured Output Prediction.*

- 2020 Giovanni De Toni, *Neural Program Synthesis: Automatic procedure learning with Neural Networks*.
- 2020 Denis Paissan, *Deep Learning for IT System Failure Prediction*.
- 2020 Sara Finelli, *A Revised Image Processing Pipeline Reveals Polyribosome Organization Evolution*.
- 2020 Sara Folchini, *A Systematic Benchmark of Supervised Learning Approaches for Clinical-Like Artificial Datasets*.
- 2019 Francesco Somnavilla, *Pushing the Envelope of SMT-Based Weighted Model Integration*.
- 2019 Giacomo Zara, *Design, Modeling and Implementation of an Action Scheduler for Twitter*.
- 2019 Antonio Longa, *Graph Embedding in 2D*.
- 2019 Jacopo Gobbi, *Constraining Generative Adversarial Networks with Semantic Loss*.
- 2019 Luca Di Liello, *Game Level Generation with Constrained Adversarial Networks*.
- 2019 Gianluca Apriceno, *Deep Structured Prediction in Embedding Space*.
- 2019 Carlo Nicolò, *Combining Deep Learning and Constraint Solving for Handwritten Algebraic Equation Recognition*.
- 2019 Martina Paganin, *Tspolysomes - Development of a Computational Pipeline to Unravel a Structural Code in Cellular Polysomes*.
- 2019 Matteo Gabburo, *Learning activation functions for Type Extension Trees*.
- 2019 Andrea Bontempelli, *Skeptical Learning in an Open World: a Gaussian Process Approach*.
- 2018 Pierfrancesco Ardino, *Multinomial Constrained Adversarial Networks*.
- 2018 Tigist Abebaw, *Vector Arithmetic on Generative Adversarial Networks*.
- 2018 Gianvito Taneburgo, *Constrained Adversarial Networks*.
- 2017 Liviu-Alexandru Bogdan, *Collaborative Human-Machine Activity Recognition*.
- 2017 Giovanni Pellegrini, *Neuro-Symbolic Learning with Type Extension Trees*.
- 2017 Luca Erculiani, *Constructive Layout Synthesis and Recommendation via Optimization Modulo Theory*.
- 2017 Maurizio Astegher, *Automatic Feature Extraction for Coactive Learning*.
- 2017 Paolo Branchi, *miRNAfind: a Machine Learning Approach for miRNA Identification*.
- 2016 Valentina Gerbaldo, *Statistical Relational Learning for Collective Protein Feature Prediction*.
- 2016 Lingzhen Chen, *Recipe Completion Using Machine Learning Techniques*.
- 2016 Paolo Morettin, *Learning Modulo Theories with Latent Variables*.
- 2015 Luca Masera, *Multiple protein feature prediction with statistical relational learning*.
- 2014 Chau Tran Anh Minh, *A relational learning approach for multi-point mutant prediction applied to tumor protein p53*.
- 2014 Dilek T. Herdagdelen, *Kernel Machines for Protein mRNA Binding Predictions*.
- 2013 Gianluca Corrado, *Towards the Post-Transcriptional Operon Model: Machine Learning Techniques for Combinatorial RNA-Protein Interaction Prediction*.

2013 Erinda Jaupaj, *Sensing Users' Transportation Mode Through Smartphones: a Data Mining Approach*.

2012 Mauro Fruet, *A Machine Learning Approach for Predicting Protein-RNA Interaction Sites*.

2009 Stefano Teso, *A Combined On/Off Lattice Approach for Protein Structure Prediction*.

Co-Chair

- *Hybrid Human Artificial Intelligence (HHAI) 2025*. Program Co-Chair with Chiara Boldrini, Shenghui Wang, Luca Pappalardo.
- *Hybrid Human-Machine Learning and Decision Making 2024*, workshop at ECMLPKDD 2024. Program Co-Chair with Burcu Sayin, Giovanna Varni, Anna Monreale, Novi Quadrianto, Artur Bogucki.
- *Hybrid Human-Machine Interaction in Surgery 2024*, workshop at the Hamlyn Symposium on Medical Robotics, 2024. Program Co-Chair with Marco Zenati.
- *Hybrid Human-Machine Learning and Decision Making 2023*, workshop at ECMLPKDD 2023. Program Co-Chair with Fabio Casati, Burcu Sayin, Anna Monreale, Roberto Pellungrini, Paula Gürtler.
- *Multidisciplinary Workshop on Advances in Preference Handling (M-PREF) 2023*, workshop at IJCAI 2023. Program Co-Chair with Haris Aziz, Ulrich Junker, Xinhang Lu, Nicholas Mattei.
- *Prestigious Applications of Intelligent Systems (PAIS) 2022*, co-located with IJCAI-ECAI 2022. Program Co-Chair with Thomas Schiex.
- *Hybrid Probabilistic Inference with Algebraic and Logical Constraints*, Tutorial at IJCAI-ECAI 2022. Speaker and organizer, together with Paolo Morettin, Pedro Zuidberg Dos Martires and Samuel Kolb.
- *From Multiple Criteria Decision Aid to Preference Learning (DA2PL) 2020*. General Chair and Program Co-Chair with Vincent Mousseau.
- *International Conference of the Italian Association for Artificial Intelligence (AI*IA) 2018*. Program Co-Chair with Chiara Ghidini and Bernardo Magnini.
- *Constraint Learning*, tutorial at IJCAI-ECAI 2018. Speaker and organizer, together with Luc De Raedt and Stefano Teso.
- *Constraint Learning*, tutorial at AAI 2018. Speaker and organizer, together with Luc De Raedt and Stefano Teso.
- *Constructive Machine Learning (CML) 2016*, workshop at NIPS 2016. Program Co-Chair with Fabrizio Costa, Thomas Gaertner and Francois Pachet.
- *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD) 2016*. General Co-Chair with Fosca Giannotti and Journal Track Co-Chair with Thomas Gaertner, Mirco Nanni and Celine Robardet.
- *Constructive Machine Learning (CML) 2015*, workshop at ICML 2015. Program Co-Chair with Fabrizio Costa, Roman Garnett and Thomas Gaertner.
- *Intelligent Personalization (IP) 2015*, workshop at IJCAI 2015. Program Co-Chair with Dietmar Jannach, Jerome Mengin, Bamshad Mobasher and Paolo Viappiani.
- *Constructive Machine Learning (CML) 2013*, workshop at NIPS 2013. Program Co-Chair with Roman Garnett and Thomas Gaertner.
- *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD) 2013*. Workshop Co-Chair with Niels Landwehr.

- *COmbining COnstraint solving with MIning and LEarning* (CoCoMiLe) 2013, workshop at AAAI 2013. Program Co-Chair with Tias Guns, Lars Kotthoff, Barry O’Sullivan.
- *COmbining COnstraint solving with MIning and LEarning* (CoCoMiLe) 2012, workshop at ECAI 2012. Program Co-Chair with Remi Coletta , Tias Guns, Barry O’Sullivan, Guido Tack.
- *Machine Learning and Intelligent Optimization in Bioinformatics* (Maliob) 2009, workshop at LION 2009. Program Chair.
- *Machine Learning and Intelligent Optimization in Bioinformatics* (Maliob) 2008, special session at CIBB 2008. Program Co-Chair with Roberto Battiti, Mauro Brunato.

Editorial activity

- Specialty Chief Editor for *Frontiers in Machine Learning and Artificial Intelligence*, together with Elisa Fromont.
- Action editor for the *Machine Learning Journal*.
- Associate editor for the *Artificial Intelligence Journal*.
- Editor of the Proceedings of *PAIS 2022 - 11th Conference on Prestigious Applications of Artificial Intelligence*, IOS PRESS, 2022. Together with Thomas Schiex.
- Editor of the Proceedings of *AI*IA 2018 – Advances in Artificial Intelligence*, Springer, 2018. Together with Chiara Ghidini, Bernardo Magnini, Paolo Traverso.
- Guest editor of the *ECML PKDD 2016 Journal Track Special Issue of the Data Mining and Knowledge Discovery Journal*, Springer, 2016. Together with Thomas Gärtner, Mirco Nanni, Celine Robardet.
- Guest editor of the *ECML PKDD 2016 Journal Track Special Issue of the Machine Learning Journal*, Springer, 2016. Together with Thomas Gärtner, Mirco Nanni, Celine Robardet.
- Series editor of the Springer book series on *Computational Synthesis and Creative Systems*. Together with Francois Pachet, Pablo Gervas, Mirko Degli Esposti.
- Guest editor of *Combining Constraint solving with Mining and Learning*, Special Issue of the Artificial Intelligence Journal. Together with Tias Guns, Guido Tack.

Reviewing activity

- Area chair:
 - ECMLPKDD 2018–2024
 - IJCAI 2020–2022
 - ECAI 2024
- Program/reviewing committee member:
 - CONLL 2015
 - AAAI 2010,2014,2015,2016,2018,2019,2021
 - ECAI 2012,2014
 - ICML 2009–2014,2018–2024
 - ECML/PKDD 2006,2007,2009–2015,2017–2019
 - IJCAI 2009,2011,2013,2015,2017–2019
 - NIPS/NeurIPS 2008–2009,2012,2013,2017–2024
 - ILP 2010
 - PRIB 2010–2012
 - MLG 2007–2009

- Reviewer for international journals:
 - ACM Transactions on Internet Technology, Artificial Intelligence Journal, Bioinformatics, BMC Bioinformatics, Electronic Letters on Computer Vision and Image Analysis, IEEE Transactions on Evolutionary Computation, IEEE Transactions on Neural Networks, IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Systems, Man and Cybernetics, IEEE Transactions on Knowledge and Data Engineering, Journal of Machine Learning Research, Machine Learning Journal, Neural Networks, Neurocomputing, Pattern Analysis and Applications, Pattern Recognition, Pattern Recognition Letters.
- Research proposal evaluation:
 - European Research Council.
 - Research Foundation Flanders.
 - Swiss National Science Foundation.
 - Netherlands Organisation for Scientific Research.

Other services

- 2024– Honorary President of the Steering Committee of ECMLPKDD
- 2021– Scientific representative for UNITN in the National AI PhD program (PhD-AI.it).
- 2019–2023 President of the Steering Committee of ECMLPKDD
- 2017– DISI Delegate for the Data Science initiative at UNITN.
- 2017–2022 ICT Representative in the Panel of the Transdisciplinary program in Computational Biology.
- 2017–2019 Member of the Steering Committee of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases.
- 2014–2017 President of the Panel of the Transdisciplinary program in Computational Biology.
- 2012–2018 Responsible for tutoring at DISI.
- 2012–2018 Member of the executive committee of the DISI ICT Doctoral School.

Publications

Papers in international journals

1. Asnicar, F., A. M. Thomas, A. Passerini, L. Waldron, and N. Segata (2024). Machine learning for microbiologists. *Nature Reviews Microbiology* **22**(4), 191–205.
2. Bronzini, M., C. Nicolini, B. Lepri, et al. (2024). Glitter or gold? Deriving structured insights from sustainability reports via large language models. *EPJ Data Science* **13**, 41.
3. Longa, A., G. Cencetti, S. Lehmann, A. Passerini, and B. Lepri (2024). Generating fine-grained surrogate temporal networks. *Communications Physics* **7**(22).
4. Robbi, E., M. Bronzini, P. Viappiani, and A. Passerini (2024). Personalized bundle recommendation using preference elicitation and the Choquet integral. *Frontiers in Artificial Intelligence* **7**, 1346684.
5. Spallitta, G., G. Masina, P. Morettin, A. Passerini, and R. Sebastiani (2024). Enhancing SMT-based Weighted Model Integration by structure awareness. *Artificial Intelligence* **328**, 104067.
6. Toni, G. D., P. Viappiani, S. Teso, B. Lepri, and A. Passerini (2024). Personalized Algorithmic Recourse with Preference Elicitation. *Transactions on Machine Learning Research*.

7. Asnicar, F., A. Thomas, A. Passerini, L. Waldron, and N. Segata (2023). Machine learning for microbiologists. *Nat Rev Microbiol*.
8. De Toni, G., B. Lepri, and A. Passerini (Feb. 2023). Synthesizing explainable counterfactual policies for algorithmic recourse with program synthesis. *Mach. Learn.* **112**(4), 1389–1409.
9. Fait, S., S. Pighin, A. Passerini, F. Pavani, and K. Tentori (2023). Sensory and multisensory reasoning: Is Bayesian updating modality-dependent? *Cognition*.
10. Girardini, N. A., S. Centellegher, A. Passerini, I. Bison, F. Giunchiglia, and B. Lepri (2023). Adaptation of Student Behavioural Routines during COVID-19: A Multimodal Approach. *EPJ Data Science* **12**(55).
11. Longa, A., V. Lachi, G. Santin, M. Bianchini, B. Lepri, P. Lio, franco scarselli, and A. Passerini (2023). Graph Neural Networks for Temporal Graphs: State of the Art, Open Challenges, and Opportunities. *Transactions on Machine Learning Research*.
12. Marconato, E., A. Passerini, and S. Teso (2023b). Interpretability Is in the Mind of the Beholder: A Causal Framework for Human-Interpretable Representation Learning. *Entropy* **25**(12).
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