

# Andrea Passerini

## Curriculum Vitae

May 2021

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### Academic Positions

- 2018– **Adjunct Professor** at Aalborg University (from 01/06/2018 to 31/05/2023).
- 2015– **Associate Professor in area 01/B1**, Department of Information Engineering and Computer Science, University of Trento.
- 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

- 2020–2023 *TAILOR: Foundations of Trustworthy AI - Integrating Reasoning, Learning and Optimization*  
**Research and Innovation Action** funded by the European Commission  
Role: Principal Investigator.
- 2019–2022 *WeNet - The Internet of US*  
**FET-PROACTIVE grant** from the European Commission  
Role: Co-Investigator.
- 2015–2017 *The Trentino Knowledge Base*  
**CARITRO Project** financed by the Caritro foundation  
Role: Scientific Coordinator.

- 2014–2015 *Protein Function Prediction by Statistical Relational Learning*  
**Google Faculty Research Award**  
 Role: Principal Investigator.
- 2014 *Ribomaps: learning translational regulation mechanisms by computational approaches*  
**NVIDIA’s Academic Hardware grant**  
 Role: Principal Investigator.
- 2011–2013 *Apprendimento Statistico Relazionale e Reactive Search Optimization*  
**PRIN grant** from the Italian Ministry of Education, Universities and Research  
 Role: Co-Investigator.
- 2008–2012 *A-CUBE: Ambient Aware Assistance*  
**“Grand Projects” grant** from the Autonomous Province of Trento  
 Role: Co-Investigator.
- 2004–2006 *April II: Applications of Probabilistic Inductive Logic Programming*  
**STREP grant** from the European Commission  
 Role: Researcher.
- 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: Researcher.

### Main research activities

My research activity is primarily in the areas of machine learning, especially statistical relational learning, interactive machine learning, learning and optimization and learning with constraints, with applications to recommender systems and bioinformatics. 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/>). I co-authored over 100 refereed papers, including forty journal publications and four invited book chapters. My h-index is 26 (Google Scholar, December 2020, [https://scholar.google.it/citations?hl=it&user=IIXgkLoAAAAJ&view\\_op=list\\_works](https://scholar.google.it/citations?hl=it&user=IIXgkLoAAAAJ&view_op=list_works)). Below is a list of my main research achievements:

- *Bridging the gap between statistical and symbolic learning*: kernels on program traces [89][117][41]; kernels on logical representations [48][86][28, 34][111]; type extension trees for modelling combinatorial features [84][112][25, 6]; relational information gain [29][83]; probabilistic-logic refinement of correlated predictions [22, 23], integrating sequential labeling with pattern mining [19], learning [53, 16, 46, 94, 98, 97] and reasoning [67, 70, 71] in hybrid domains.
- *Constructive recommendations*: constructive preference elicitation [1, 0, 57, 61, 59, 58, 46, 69], incorporating structured feedback [65, 96, 94].
- *Machine learning algorithms for computational biology*: prediction of disulphide bonding state and bridges [40][37][45][91]; prediction of metal binding sites [80][82][26, 30, 31, 36][39][87][42]; prediction of secondary [118] and tertiary [81][85] structure; prediction of catalytic residues in enzymes [33]; predicting mutations in viruses [20] [111]; studying the impact of translational regulation in protein synthesis [17, 18, 21, 27].
- *Multiclass classification*: error-correcting output codes [92][44].
- *Learning complex data structures*: structured-output learning with probabilistic [35][115] and search-based [74, 75, 80, 82][100] approaches.
- *Learning to optimize*: machine learning approaches for multi-objective optimization and interactive decision making [24, 32][76, 73, 79][108, 107].

### Main research collaborations (outside host Departments)

- 2015– *Constructive recommendations* [69, 66]  
**Paolo Viappiani**, Lip6, CNRS, France.
- 2015– *Learning and inference in hybrid domains* [67, 70, 71]  
**Guy Van den Broeck**, UCLA, USA.  
**Vaishak Belle**, University of Edinburgh, UK.
- 2010– *Discovering translational regulation mechanisms* [17, 18, 21, 27]  
**Alessandro Quattrone**, Centre for Integrative Biology (CIBIO), University of Trento.  
**Gabriella Viero**, Istituto di Biofisica - CNR Trento.
- 2006– *Learning in relational domains using complex combinatorial features, relational information gain* [6, 25, 29, 83, 84, 112]  
**Manfred Jaeger**, Institut for Datalogi, Aalborg Universitet, Denmark.
- 2004– *Hybrid approaches combining statistical and relational learning* [62, 63, 34, 41, 86, 117]  
**Luc De Raedt**, Declarative Languages and Artificial Intelligence, Katholieke Universiteit Leuven, Belgium.
- 2004–2012 *Learning algorithms for protein feature prediction* [31, 36, 42, 78]  
**Burkhard Rost**, Bioinformatic and Computational Biology Departement, Technische Universitaet Muenchen, Germany.
- 2005–2007 *Learning algorithms for metal binding site prediction* [39, 87]  
**Ivano Bertini**, Magnetic Resonance Center (CERM), University of Florence.
- 2005–2006 *Declarative kernels* [116]  
**Stephen Muggleton**, Computational Bioinformatics Laboratory, Imperial College London, UK.

## Awards

- **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*, 2014.
- **Best paper award** at the *Metaheuristics International Conference (MIC 2013)*, Singapore, 2013.

## Invited Talks (recent)

- 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, Tittisee, 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.

## Main Software Implementations

- *CAN* [53], a tensorflow implementation of Constrained Adversarial Networks, an extension of GANs that allow to embed constraints in the generator during training and generate objects that satisfy constraints in expectation.
- *PyWMI* [56] a Python framework and toolbox for probabilistic inference using Weighted Model Integration.
- *Pyconstruct* [60] a Python library for declarative, constrained structured-output prediction.
- *Scienscan* [74, 75][100] an efficient visualization and browsing tool for academic search. Available as a standalone server (<http://scienscan.disi.unitn.it>).
- *BC-EMO* [32][76][108][107]: a genetic algorithm adapting to the decision maker.
- *CatANalyst* [33]: a web server for predicting catalytic residues in proteins from sequence and structure. Available as a standalone server (<http://catanalyst.disi.unitn.it>).
- *kFOIL* [86][28, 34][111]: a statistical relational learning system combining ILP and kernels.
- *TET* [84] [112]: an expressive representation language capable of encoding complex combinatorial features of relational data. With a search-based algorithm to learn TETs from data.
- *MetalDetector* [30, 36]: a web server for predicting metal binding sites and disulfide bridges in proteins from sequence. Available as a standalone server (<http://metaldetector.dsi.unifi.it>).
- *DISULFIND* [40]: a disulfide bonding state and cysteine connectivity prediction server. Available both as a standalone server (<http://disulfind.dsi.unifi.it>) and integrated into the PredictProtein service (<http://www.predictprotein.org/>).
- *Zinc Finder* [39]: a software implementing a machine learning method for the prediction of the zinc-binding state of pairs of nearby amino-acids from sequence only. Available at <http://zincfinder.dsi.unifi.it>
- *Kernels on Prolog Proof Trees* [41]: a software implementing kernels on Proof Trees generated by Prolog programs, and including a module for computing kernels over ground terms [89]. Available, with a tutorial on its application to protein classification, at <http://www.dsi.unifi.it/~paolo/ECML-Tutorial/>.

## Teaching activities

- 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

- 2019– Gianluca Apriceno (co-advisor), *Neuro-symbolic Integration*.
- 2019– Antonio Longa (co-advisor), *Computational Social Science*.
- 2019– Alessia Bertugli, *Human-like Machine Learning*.
- 2017– Luca Erculiani, *Human-like Machine Learning*.
- 2017– Giovanni Pellegrini, *Constructive Recommendation*.
- 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

- 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*.

### Supervised Bachelor students

- 2019 Davide Tessarolo, *Scomposizione del sistema Smart Plan*.
- 2019 Marco Civettini, *Il Sistema di Raccomandazione Smart Plan: Descrizione ed Estensione*.
- 2015 Matteo Presutto, *Automatic Diagnosis of Diabetic Retinopathy: A Deep Learning Approach*.
- 2014 Vincenzo Caurio, *Algoritmi di ricerca per analisi di cluster di fattori regolatori*.

- 2014 Luca Erculiani, *Algoritmi per il calcolo della coesione di insiemi di fattori di traduzione per la predizione di interazioni*.
- 2013 Giulio Bertamini, *Mining sets of patterns to disclose ribo-coding clusters of RNA-binding proteins and ncRNAs*.

## Co-Chair

- *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 AAAI 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 COstraint solving with MIning and LEarning (CoCoMiLe)* 2013, workshop at AAAI 2013. Program Co-Chair with Tias Guns, Lars Kotthoff, Barry O'Sullivan.
- *COmbining COstraint 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

- Action editor of the *Machine Learning Journal*.
- Associate editor of *Frontiers in Big Data*.
- Editor for the *Artificial Intelligence Journal*.
- Guest editor of the *ECML PKDD 2016 Journal Track Special Issue of the Data Mining and Knowledge Discovery Journal*. Together with Thomas Gärtner, Mirco Nanni, Celine Robardet.
- Guest editor of the *ECML PKDD 2016 Journal Track Special Issue of the Machine Learning Journal*. 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 2018–2021
  - IJCAI 2020, 2021
- Program/reviewing committee member:
  - CONLL 2015
  - AAAI 2010,2014,2015,2016,2018,2019
  - ECAI 2012,2014
  - ICML 2009–2014,2018,2019,2021
  - ECML/PKDD 2006,2007,2009–2015,2017–2019
  - IJCAI 2009,2011,2013,2015,2017–2019
  - NIPS 2008–2009,2012,2013,2017–2021
  - 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:
  - Research Foundation Flanders.
  - Swiss National Science Foundation.
  - Netherlands Organisation for Scientific Research.

### Other services

- 2021– Scientific representative for UNITN in the National AI PhD program (PhD-AI.it).
- 2019– President of the Steering Committee of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases.
- 2017– DISI Delegate for the Data Science initiative at UNITN.
- 2017– 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. Campigotto, P., S. Teso, R. Battiti, and A. Passerini (2021). Learning Modulo Theories for constructive preference elicitation. *Artificial Intelligence* **295**, 103454.
2. Nanni, M. et al. (2021). Give more data, awareness and control to individual citizens, and they will help COVID-19 containment. *Ethics and Information Technology*, 1–6.
3. Sayin, B., E. Krivosheev, J. Yang, A. Passerini, and F. Casati (2021). A review and experimental analysis of active learning over crowdsourced data. *Artificial Intelligence Review*. accepted.
4. Roy, S. et al. (2020). Deep learning for classification and localization of COVID-19 markers in point-of-care lung ultrasound. *IEEE Transactions on Medical Imaging*.
5. Zhang, W., A. Passerini, and F. Giunchiglia (2020). Dealing with Mislabeling via Interactive Machine Learning. *KI - Künstliche Intelligenz* **34**(2), 271–278.
6. Jaeger, M., M. Lippi, G. Pellegrini, and A. Passerini (2019). Counts-of-counts similarity for prediction and search in relational data. *Data Mining and Knowledge Discovery*.
7. Maccari, L. and A. Passerini (2019). A Big Data and machine learning approach for network monitoring and security. *Security and Privacy* **2**(1), e53.
8. Morettin, P., A. Passerini, and R. Sebastiani (2019). Advanced SMT techniques for weighted model integration. *Artificial Intelligence* **275**, 1–27.
9. Teso, S., L. Maserà, M. Diligenti, and A. Passerini (2019). Combining Learning and Constraints for Genome-wide Protein Annotation. *BMC-Bioinformatics* **20**(338).
10. Zeni, M., W. Zhang, E. Bignotti, A. Passerini, and F. Giunchiglia (2019). Fixing Mislabeling by Human Annotators Leveraging Conflict Resolution and Prior Knowledge. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* **3**(1), 32:1–32:23.
11. Dragone, P., S. Teso, and A. Passerini (2018). Constructive Preference Elicitation. *Frontiers in Robotics and AI* **4**, 71.
12. Gundogdu, D., A. N. Finnerty, J. Staiano, S. Teso, A. Passerini, F. Pianesi, and B. Lepri (2017). Investigating the association between social interactions and personality states dynamics. *R Soc Open Sci* **4**(9), 170194.
13. Kia, S. M., F. Pedregosa, A. Blumenthal, and A. Passerini (2017). Group-level spatio-temporal pattern recovery in {MEG} decoding using multi-task joint feature learning. *Journal of Neuroscience Methods* **285**, 97–108.
14. Kia, S. M., S. Vega Pons, N. Weisz, and A. Passerini (2017). Interpretability of Multivariate Brain Maps in Linear Brain Decoding: Definition, and Heuristic Quantification in Multivariate Analysis of MEG Time-Locked Effects. *Frontiers in Neuroscience* **10**, 619.
15. Passerini, A., G. Tack, and T. Guns (2017). Introduction to the special issue on Combining Constraint Solving with Mining and Learning. *Artificial Intelligence* **244**. Combining Constraint Solving with Mining and Learning, 1–5.
16. Teso, S., R. Sebastiani, and A. Passerini (2017). Structured learning modulo theories. *Artificial Intelligence* **244**. Combining Constraint Solving with Mining and Learning, 166–187.
17. Corrado, G., T. Tebaldi, F. Costa, P. Frasconi, and A. Passerini (2016). RNAcommender: genome-wide recommendation of RNA-protein interactions. *Bioinformatics*.

18. Viero, G., L. Lunelli, A. Passerini, P. Bianchini, R. J. Gilbert, P. Bernabò, T. Tebaldi, A. Diaspro, C. Pederzoli, and A. Quattrone (2015). Three distinct ribosome assemblies modulated by translation are the building blocks of polysomes. *The Journal of Cell Biology* **208**(5), 581–596.
19. Avci, U. and A. Passerini (2014). Improving Activity Recognition by Segmental Pattern Mining. *IEEE Transactions on Knowledge and Data Engineering* **26**(4), 889–902.
20. Cilia, E., S. Teso, S. Ammendola, T. Lenaerts, and A. Passerini (2014). Predicting virus mutations through statistical relational learning. *BMC Bioinformatics* **15**(1), 309.
21. Corrado, G., T. Tebaldi, G. Bertamini, F. Costa, A. Quattrone, G. Viero, and A. Passerini (2014). PTRcombiner: mining combinatorial regulation of gene expression from post-transcriptional interaction maps. *BMC Genomics* **15**, 304.
22. Saccà, C., S. Teso, M. Diligenti, and A. Passerini (2014). Improved multi-level protein-protein interaction prediction with semantic-based regularization. *BMC Bioinformatics* **15**, 103.
23. Teso, S. and A. Passerini (2014). Joint Probabilistic-Logical Refinement of Multiple Protein Feature Predictors. *BMC-Bioinformatics* **15:16**.
24. Campigotto, P., A. Passerini, and R. Battiti (2013). Active learning of Pareto fronts. *IEEE Transactions on Neural Networks and Learning Systems* **25**(3), 506–519.
25. Jaeger, M., M. Lippi, A. Passerini, and P. Frasconi (2013). Type Extension Trees for Feature Construction and Learning in Relational Domains. *Artificial Intelligence Journal* **204**(30–55).
26. Passerini, A., M. Lippi, and P. Frasconi (2012). Predicting Metal-Binding Sites from Protein Sequence. *IEEE/ACM Trans. Comput. Biol. Bioinformatics* **9** (1), 203–213.
27. Tebaldi, T., A. Re, G. Viero, I. Pegoretti, A. Passerini, E. Blanzieri, and A. Quattrone (2012). Widespread translational control uncouples transcriptome and translatoome profiles in mammalian cells. *BMC Genomics* **13:220**.
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