

FERDINANDO CICALESSE

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EDUCATION

PhD in Computer Science, University of Salerno, 2001

Laurea degree in Informatics, University of Salerno, 1995

EMPLOYMENT

Full Professor, Department of Computer Science, University of Verona, Italy 2022 - present

Associate Professor, Department of Computer Science, University of Verona, Italy 2014 - 2022

Associate Professor, Department of Computer Science and Appl., University of Salerno, Italy 2006 - 2014

Research Group Leader, “Combinatorial Search Algorithms in Bioinformatics”, Faculty of Technology, Bielefeld University, Germany 2004 - 2009

Assistant Professor (Ricercatore a tempo indeterminato), Department of Computer Science and Appl., University of Salerno, Italy 2001 - 2006

AWARDS

ISAAC 2015 - Best paper Award for the article *Trading off Worst and Expected Cost in Decision Tree Problems*, co-authored with A. Saettler and E. Laber, 2015

Sofja Kovalevskaja Award 2004, for the project *Combinatorial Search Algorithms in Bioinformatics*, awarded by the Alexander von Humboldt Foundation and the German Federal Ministry of Education and Research. This award is given every two years to approximately 10 young international scientists across all disciplines to carry on research for 5 years at a German university, the avg. success rate is 10 – 15%.

Best Italian PhD Thesis in Theoretical Computer Science 2001, awarded by the Italian Chapter of the European Association for Theoretical Computer Science (EATCS)

GRANTS and FELLOWSHIPS

European Research Council - Consolidator Grant 2013, research project on *Infomics - Algorithms and Methodological Tools for Information Management in the -omics Sciences* (Euro 1 144 800), selected for the second stage by panel PE6-Computer Science and Informatics (selection rate 14%). The project was not funded.

ZiF Cooperation Group Programme, grant size: **50 000 Euro**, Center for Interdisciplinary Research (ZiF), Bielefeld, 2010 - 2013 (Principal Investigator)

Granting scheme of Univ. of Salerno and the Provinces of Salerno and Avellino, 4 month grant awarded for a joint project with Freie Universität and Humboldt Universität Berlin, 2012

DAAD fellowship, Visiting researcher at Department of Computer Science, Freie Universität Berlin, Germany, 2 months, 2011

Marie Curie fellowship, Visiting professor at Alfréd Rényi Institute of Mathematics, Hungarian Academy of Sciences, Budapest, Hungary, 6 months, EU-FP6 ToK *HUBI: Hungarian Bioinformatics*, 2009 - 2010

DFG Research Grant, *Advances in Search and Sorting*, grant size: **120 000 Euro**, Deutsche Forschungsgemeinschaft, 2007 - 2010 (cooperation partner)

Sofja Kovalevskaja Award, grant size **700 000 Euro**, Alexander von Humboldt Foundation and German Federal Ministry of Education and Research, 2004 - 2009 (Principal Investigator)

Marie Curie fellowship, EU Research Training Network *COMBSTRU: Combinatorial Structure of Intractable Problems*, 2 year contract, interrupted for taking up the research group leadership in Bielefeld, 2004

DAAD fellowship for a project on *Algorithms in Bioinformatics*, visiting researcher at Center for Biotechnology, Bielefeld University, Germany, 6 weeks, 2004

ZiF fellowship, Visiting researcher at the Bielefeld Center for Interdisciplinary Research (ZiF), within the Research Group *General Theory of Information Transfer and Combinatorics*, 2002 - 2003

COST Action fellowship, Visiting researcher at Faculty of Informatics, Vienna University of Technology, 6 weeks, 2000

CNR fellowship, Italian Council of Research fellowship for a research visit to Middlesex University, London, UK, 8 months, 1995 - 1996

Erasmus fellowship, Middlesex University, London, UK, 3 months, 1993

SCIENTIFIC RESPONSIBILITIES

a. Conference chairing and/or scientific committee participation

- **ICLR 2022**, 10th Intl. Conf. Learning Representations, Virtual-only Conference, 25-29 Apr. 2022
- **NeurIPS 2021**, 35th Conf. on Neural Information Processing Systems, Virtual-only Conference, 6-14 Dec. 2021.
- **ICML 2021**, 38th Intl. Conf. on Machine Learning, Virtual-only Conference, 18-24 July 2021.
- **NeurIPS 2020**, 34th Conf. on Neural Information Processing Systems, Vancouver, Canada, 6-12 Dec. 2020.
- **ICML 2020**, 37th Intl. Conf. on Machine Learning, Vienna, Austria, 12-18 July 2020.
- **LATIN 2020**, 14th Latin American Theoretical Informatics Symposium, São Paulo, Brazil, 25-29 May 2020
- **AAIM 2016**, 11th Intl. Conf. on Algorithmic Aspects of Information and Management, Bergamo, Italy, 18-20 July 2016
- **CPM 2015**, 26th Annual Symp. on Combinatorial Pattern Matching, Ischia, Italy, 29 June-1 July 2015 (**co-chair**)
- **SPIRE 2014**, 21st Intl. Symp. on String Processing and Information Retrieval, Ouro Preto, Minas Gerais, Brazil, 20-23 Oct. 2014
- **ICTCS 2014**, 15th Italian Conf. on Theoretical Computer Science, Perugia, Italy, 17-19 Sep. 2014
- **FCT 2013**, 19th Intl. Symp. on Fundamentals of Computation Theory, Liverpool, United Kingdom, 19-21 Aug. 2013
- **Search Methodologies III**, ZiF - Center for Interdisciplinary Research, Bielefeld, Germany, 3-7 Oct. 2012 (**co-chair**)
- **CPM 2012**, 23rd Annual Symp. on Combinatorial Pattern Matching, Helsinki, Finland, 3-5 July 2012
- **SOFSEM 2012**, 38th Intl. Conf. on Current Trends in Theory and Practice of Computer Science, Špindlerův Mlýn, Czech Republic, 21-27 Jan. 2012

- **ICALP2011GT**, Algorithms and data structures for selection, identification and encoding, ICALP 2011 Workshop, Zurich, Switzerland, 3 July 2011 (**co-chair**)
- **CCP 2011**, Intl. Conf. on Data Compression, Communication, and Processing, Palinuro, Italy, 21-24 June 2011
- **Search Methodologies II**, ZiF - Center for Interdisciplinary Research, Bielefeld, Germany, 25-29 Oct. 2010 (**co-chair**)
- **Search Methodologies**, Dagstuhl Seminar 0928, Leibniz-Zentrum für Informatik, Germany, 5-10 July 2009 (**co-chair**)
- **LATIN 2008**, Latin American Theoretical Informatics Symposium, Buzios, Rio de Janeiro, Brazil, 7-11 Apr. 2008
- **CASB 2006**, Intl. Conf. on Computational and Systems Biology, Dallas, USA 13-14 Nov. 2006
- **COSSAC 2001**, Combinatorics of Searching, Sorting & Coding, Ischia, Italy, 7-9 Sep. 2001 (**co-chair**)
- **SMI '96**, Intelligent Multimedia Systems, Ravello, Italy, 13-15 Nov. 1996

b. Guest Editorial activity

- **Algorithmica**, special issue on *Combinatorial Pattern Matching*, vol. 79 (3), 2017, pp. 797–883
- **Algorithmica**, special issue on *Group Testing and Compressed Sensing*, vol. 67 (3), 2013
- **Lecture Notes in Computer Science Festschrift**, *Information Theory, Combinatorics and Search Theory*, vol. 7777, 2013
- **Discrete Applied Mathematics**, special issue on *Combinatorics of Searching, Sorting, and Coding*, vol. 137 (1), 2004

c. Refereeing and reviewing

- **International Science Institutions.** I regularly serve as external expert reviewer for the following institutions: US National Science Foundation (NSF), US National Security Agency (NSA), United States-Israel Binational Science Foundation (BSF), Italian Ministry for Education, University, and Research (MIUR), Science Foundation Ireland (SFI), Swiss National Science Foundation (SNSF)
- **International journals:** I regularly serve as referee for ACM Transactions on Algorithms, Algorithmica, Central European Journal of Mathematics, Computers and Operations Research, Discrete Applied Mathematics, IEEE/ACM Transactions on Computational Biology and Bioinformatics, IEEE Transactions on Industrial Applications, IEEE Transactions on Information Theory, Information Processing Letters, Journal of Combinatorial Theory, Journal of Discrete Algorithms, Machine Learning, SIAM Journal on Computing, Soft Computing, Theoretical Computer Science, and others
- **International conferences:** I regularly serve as a referee for ESA, ICALP, ICML, ICTCS, ISAAC, ISIT, LATIN, MICAI, MFCS, NeurIPS, SIROCCO, SODA, STACS, STOC, WABI, and others

d. Project management activity and research group participation

- **International Projects:**

Search Methodologies, ZiF Cooperation Group Programme, 3 years, **Principal Investigator**, funded by Center for Interdisciplinary Research (ZiF), Bielefeld, Germany, 2010-2013

Combinatorial Search Algorithms in Bioinformatics, 5 years, **Principal Investigator**, University of Bielefeld, funded by Alexander von Humboldt Foundation and German Federal Ministry of Education and Research, 2004 - 2009

Advances in Search and Sorting, 3 years, **cooperation partner**, funded by German Research Foundation (DFG), 2007-2010

Approximation and Randomized Algorithms in Communication Networks (ARACNE), 3 years, funded by European Union FP6-RTN, 2000-2003

- **National Projects:**

Flussi di informazione in reti sociali, 2 years, Univ. of Salerno, 2013

Analisi di Strutture e Dinamiche in Reti Complesse, 2 years, Univ. of Salerno, 2012

Problemi Algoritmici e Computazionali in Reti Sociali, 2 years, Univ. of Salerno, 2011

Studio della diffusione di Informazioni, Comportamenti e Dinamiche in Reti Complesse, 2 years, Univ. of Salerno, 2010

Problemi algoritmici e sistemistici in reti sociali, 2 years, Univ. of Salerno, 2009

Ricerca in gross moli di dati, 2 years, Univ. of Salerno, 2008

Modelli, Architetture ed Applicazioni peer-to-peer, 2 years, Univ. of Salerno, 2007

Comunicazione efficiente in reti wireless, 2 years, Univ. of Salerno, 2006

Utilizzo Efficiente della rete fissa ad alta velocità e di Reti senza fili infrastrutturate, 2 years, PRIN 2001, MIUR, 2001

e. **Committees and other service**

- **Programme director of the Phd Programme in Computer Science** at University of Verona, Italy, since 2022
- **Programme director of the Bioinformatics Bachelor degree** at University of Verona, Italy, 2015-2023
- Member of the **scientific committee of the Computer science PhD programme** at University of Verona, Italy, since 2017
- Member of the **scientific committee of the Computer Science and Information Engineering PhD Programme** at University of Salerno, Italy, 2013 - 2016
- Member of the **scientific committee of the Computer Science PhD programme** at University of Salerno, Italy, 2009 - 2012
- Member of the **scientific committee of the Bioinformatics PhD programme** at the University of Benevento, Italy, 2008 - 2009
- Member of the **scientific committee of the International Graduate School in Bioinformatics and Genome Research** at Bielefeld University, Germany, 2005 - 2009
- Member of the **selection committee for the best Italian PhD thesis in theoretical computer science** for the Italian Chapter of EATCS, 2018
- Member of the **selection committee of Computer Science PhD Programme** at University of Verona, 2019
- Member of the **selection committee for AdR3712/21 in Operating Research (MAT/09)**, University of Verona, 2021
- Head of the **selection committee for Associate Researcher (RTD-a) in Computer Science (INF/01)**, University of Verona, 2018

TEACHING

a. **Invited Lectures at International Schools:**

- Senior Lecturer for the **5th Emléktábla Workshop** of the János Bolyai Mathematical Society and the Alfréd Rényi Institute of Mathematics, Budapest, Hungary, 2013
- Invited Lecturer at the **Doctoral School of Mathematics and Computer Science**, University of Primorska, Koper, Slovenia, 2012

b. **At University of Verona:**

- *Algorithm Design* (ac. years 2016/17-present); 1-semester course (48 hours), 1st year masters program, 20-30 students, sole responsible

- *Algorithms for Bioinformatics* (ac. years 2014/15 - 2019/20); 1-semester course (60 hours), 2nd year bachelor program, 60-80 students, sole responsible
- *Computational Complexity* (ac. years 2014/15 - present); 1-semester course (60 hours), 1st year masters program, 40-60 students, sole responsible
- *Informational Methods* (ac. years 2020/21, 2021/22); 1-semester course (56 hours), 2nd year bachelor program, 30-50 students
- *Computational Game Theory* (ac. years 2021/22 - present); 1-semester course (48 hours), 1st year masters program, 10-20 students, sole responsible

c. At University of Salerno:

- *Computer Networks* (ac. year 2013/14); 1-semester course (84 hours), 2nd year bachelor program, 60-80 students, sole responsible
- *Operating Systems* (ac. years 2008/09, 2009/10, 2010/11, 2011/12); 1-semester course (84 hours), 1st year bachelor program, 60-80 students, sole responsible
- *Basic Algorithmics* (ac. year 2010/11); 1-semester course (60 hours), 1st year bachelor program, 80-100 students, sole responsible
- *Information Theory* (ac. years 2002/03, 2003/04, 2006/07, 2007/08, 2008/09, 2009/10); 1-semester course (24 hours), 1st year masters program, 60-70 students, sole responsible
- *Laboratory of Operating Systems* (ac. years 2000/01, 2006/07); 1-semester course (64 hours), 2nd year bachelor program, 100-120 students, sole responsible
- *Programming Languages I* (ac. year 2003/04); 1-semester course (64 hours), 1st year bachelor program, 100-120 students, sole responsible
- *Basic Computer Science* (ac. years 2000/01, 2001/02); 1-semester course (64 hours), 1st year bachelor program, 100-120 students, sole responsible
- *Laboratory of Algorithms and Data Structures* (ac. year 2000/01); 1-semester course (64 hours), 2nd year bachelor program, 80-100 students, T.A.

d. At Bielefeld University:

- *Advanced algorithmic techniques for Bioinformatics* (ac. years 2007/08); 1-semester course (72 hours), 3rd year bachelor program, 50-60 students, with Zs. Lipták
- *Elements of Combinatorics for Computer Scientists* (ac. years 2005/06, 2006/07); 1-semester course (56 hours), masters and PhD program, 15-25 students, sole responsible
- *Complex Interactions in Molecular Systems: A Game Theoretic Approach* (ac. year 2005/06); 1-semester course (56 hours), masters and PhD program, 10-20 students, sole responsible

e. For the Pan-European MSc Applied Informatics Programme, Middlesex University of London and University of Salerno:

- *Intelligent Tutoring Systems*, (ac. year 1994/95); 1 month course (16 hours), masters level, 20 students, sole responsible

STUDENT SUPERVISION, MENTORING

a. Bachelor thesis supervisor of

- Eros Rossi, thesis on “Analisi teorica e sperimentale di nuovi approcci ai codici D-ari di Fano”, University of Verona, July 2018
- Davide Bianchin, thesis on “On a generative model of sequences based on approximate duplications”, University of Verona, July 2017

b. Master’s thesis supervisor of:

- Matteo Zeggiotti, thesis on “On the complexity of the RDIN Problem”, University of Verona, July 2021
- Andrea Caucchiolo, thesis on “Complexity and Algorithmic Questions on the Directed Intersection Representation of DAGs”, University of Verona, October 2020

- Eros Rossi, thesis on “Symbolwise MAP decoding for Multiple Deletion Channel: heuristics and experiments”, University of Verona, October 2020

c. Phd Supervisor of

- Andrea Caucchiolo, currently enrolled in the Computer Science Phd Programme, working on *Complexity of intersection representation of directed graphs*
- Dario Ostuni, currently enrolled in the Computer Science Phd Programme, working on *Computer systems for didactics and competitions*
- Massimiliano Rossi, thesis on *Algorithms and Data Structures for Coding, Indexing, and Mining of Sequential Data*, defended on February 17, 2020 at the Department of Computer Science, University of Verona (now PostDoc at University of Florida, US)
- José Amgarten Quitzau, thesis on *Biological Applications for De Bruijn Subgraphs and Interval Group Testing*, defended (top grade) on March 25, 2010 at the Faculty of Technology, Bielefeld University
- Travis Gagie, thesis on *New Algorithms and Lower Bounds for Sequential-Access Data Compression*, defended (top grade) on July 27, 2009 at the Faculty of Technology, Bielefeld University (now professor at Dalhousie University, Canada)
- Christian Heup, thesis on *L-Identification entropy for sources*, defended (with distinction) on December 11, 2006 at the Faculty of Mathematics, Bielefeld University

d. Member of the advisory committees of the PhD Programme in Computer Science at University of Verona for: Andrea Caucchiolo (thesis on “Complexity of intersection representation of digraphs”, 2021); Sara Giuliani (thesis on “BWT and string-complexity measures”, 2019-21); Davide Cenzato (thesis on “On the BWT of string collections”, 2019-21); Antonella Mensi (thesis on “Random Forests for Outlier Detection: Methodological Issues and Applications”, 2018-21); Giulio Mazzi (thesis on “Rule-Based Policy Interpretation and Shielding for Partially Observable Monte Carlo Planning”, 2018-21); Matteo Murari (thesis on “A Multi-Agent Approach for Cyber-Security Scenarios”, 2019-20); Riccardo Mengoni (thesis on “Quantum Machine Learning”, 2016-19); Lorenzo Bottarelli (thesis on “Information Gathering Optimization for Environmental Monitoring”, 2015-18)

e. PostDoc Mentor of Hans-Michael Kaltenbach (2006, now research associate at ETH Zürich, Switzerland), Zsuzsanna Lipták (2007-2009, now professor at University of Verona, Italy), Martin Milanič (2007-2009, now professor at University of Primorska, Slovenia), Julia Mixtaki-Zakotnik (2008), Yasmin Rios Solis (2007, now professor at Universidad Autónoma de Nuevo León, Mexico)

f. Referee for PhD Program in Information Engineering, Department of Engineering and Information, University of Brescia, thesis “Information Theoretic View on Risk”, candidate: Giorgio Arici, January 2019

TALKS

a. Invited talks at International Research Centres and Universities

- **CS colloquium at Bar Ilan university**, Bar Ilan, Israel, Jan. 2022. Talk on *Machine teaching with limited information on the learner*
- **Rényi Institute “Seminar on Search”**, Budapest, Hungary, Dec. 2020. Talk on *Complexity and algorithmic results on a novel information content representation of digraphs*
- **University of Liverpool, Department of Computer Science**, May 2013. Talk on *Combinatorial Search and Decision Trees*
- **PUC-Rio, Department of Computer Science**, Jan. 2013. Talk on *Approximate Pattern Matching with Applications to Bioinformatics*
- **Freie Universität Berlin, Department of Computer Science**, Aug. 2011. Talk on *Competitive analysis of function evaluation in the decision tree model with priced information*
- **University of Ljubljana “Seminar za teorijo grup in kombinatoriko”**, Nov. 2010. Talk on *Searching in partially ordered structures: average-case minimization*

- **University of Primorska “Raziskovalni matematični seminar”**, Nov. 2010. Talk on *Superselectors: Efficient Constructions and Applications*
- **University of Lugano**, Nov. 2009. Talk on *Combinatorial search algorithms for function evaluation*
- **Rényi Institute “Search Seminar”**, Budapest, Oct. 2008. Talk on *Optimal, minimum interaction fault-tolerant search, with lie-costs*
- **Rényi Institute “Combinatorics Seminar”**, Budapest, Sept. 2008. Talk on *Crossing antichains and the Boolean function evaluation*

b. Invited talks at International Conferences and Workshops

- **ISAIM 2014 Intl. Symp. on Artificial Intelligence and Mathematics**, Jan. 2014. Stream on Boolean and pseudo-Boolean Functions. Talk on *Function Evaluation: decision trees optimizing simultaneously worst and expected testing cost*
- **16th EURO - INFORM Joint Intl. Conference**, July 2013. Talk on *Evaluation of Boolean Functions with Non-Uniform Costs: Beyond Monotonicity*
- **IMA Workshop on “Group Testing Designs, Algorithms, and Applications to Biology”**, Feb. 2012. Talk on *Competitive Testing for Evaluating Priced Functions*
- **48th Annual Allerton Conference**, University of Illinois at Urbana-Champaign, Sept. 2010. Talk on *Combinatorial structures for group testing and its applications*
- **Workshop on Data Compression**, Bielefeld, July 2009. Talk on *Searching with little structure*
- **DIMACS-RUTCOR Workshop on Boolean and Pseudo-Boolean Functions**, New Brunswick, Jan. 2009. Talk on *Competitive evaluation of threshold functions and game trees in the priced information model*
- **Dagstuhl Seminar 08301 on “Group testing in the Life Sciences”**, Dagstuhl, July 2008. Talk on *2-Stage Fault-tolerant interval group testing*
- **Expert workshop on “Boolean functions”**, CRI, Haifa, Israel, Jan. 2008. Talk *On the competitive ratio of evaluating priced functions*
- **Mini-conference on Applied Combinatorics**, Columbia, SC, US, Oct. 2007. Talk on *A linear programming approach to the evaluation of priced functions*
- **SIAM Conference on Discrete Mathematics 06**, Victoria, British Columbia, Canada, June 2006. Invited talk on *Searching with lies under error cost constraints*
- **Workshop “Erdős Magic for Algorithms and Games”**, Bertinoro, Italy, Apr. 2005. Talk on *Optimal group testing algorithms with interval queries and their application to splice site detection*
- **Workshop on “Combinatorial Search”**, Budapest, Hungary, Apr. 2005. Talk on *Querying with priced information*
- **Workshop on “Search, Sorting and Coding”**, Bielefeld, Germany, Oct. 2000. Talk on *Search with delays and erasure-errors*
- **Conference on “Search and Communication Complexity”**, Balatonlelle, Hungary, July 2000. Talk on *New results on the Ulam-Rényi game*

c. Contributed talks at International Conferences and Workshops

I was speaker at the following conferences for presenting one of my papers (see list of publications): IWOCA2021, COCOON2020, ISIT2020, ICML2019, ISIT2019, ISIT2018, ISIT2017, ISAIM2014, SPIRE2013, CiE2013, CPM2012, FUN2012, WADS2011, FCT2011, ESA2010, IWOCA2010, ICALP2008, ISAAC2007, ISAAC2006, ESA2005, STOC2005, ISAAC2003, FUN2001, ISAAC2000, COCOON2000, ISIT2000, ESA1999, ICTCS’98, WILF’97, ISFL’97

LANGUAGE SKILLS

Italian, *mother tongue*; English, *fluent*; German, *fair*; Hungarian, *fair*

COMPLETE LIST OF PUBLICATIONS

I have published more than 120 scientific articles, most appeared in top-tier international peer-reviewed journals, e.g., Journal of the ACM (probably the most prestigious journal in Computer Science), IEEE Transactions on Information Theory (the most representative and competitive journal in information theory)¹, Algorithmica, Theoretical Computer Science (two of the reference journals for the algorithmic community in theoretical computer science). My articles have been presented at some of the highest ranked conferences e.g., STOC, ICALP (top venues for papers in theory of computation), NeurIPS, ICML, IJCAI, AAAI, (most competitive conferences in machine learning and AI), SODA and ESA (the flagship American and European conferences in algorithms).

Book

1. F. Cicalese, **Fault Tolerant Search Algorithms**, Series: *Monographs in Theoretical Computer Science. An EATCS Series*, ISBN: 978-3-642-17326-4, Springer-Verlag, 2013.

Book Chapters

2. F. Cicalese, F. Montagna, *Ulam-Rényi Game Based Semantics for Fuzzy Logics*, in: **Handbook of Mathematical Fuzzy Logic (Studies in Logic)**, P. Cintula, C. Fermüller, C. Noguera (Eds.), College Publications, pp. 1029–1062, 2015.
3. F. Cicalese, D. Mundici, *Recent developments of feedback coding, and its relations with many-valued logic*, in: **Proof, Computation and Agency - Logic at the Crossroads**, J. van Benthem, A. Gupta, R. Parikh (Eds.), Springer-Verlag, Synthese Library 352, pp 115–131, 2011.
4. F. Cicalese, C. Deppe, *Q-ary Ulam-Rényi game with constrained lies*, in: **General Theory of Information Transfer and Combinatorics**, R. Ahlswede (Ed.), Lecture Notes in Computer Science, Springer-Verlag, Vol. 4123, pp. 663–679 2006.
5. F. Cicalese, D. Mundici, *Learning and the Art of Fault-tolerant Guesswork*, in: **Adaptivity and Learning - An Interdisciplinary Debate**, R. Khün, R. Menzel, W. Menzel, U. Ratsch, M.M. Richter, I.O. Stamatescu (Eds.), Springer-Verlag, pp. 115–140, 2003.
6. F. Cicalese, D. Mundici, U. Vaccaro, *Rota-Metropolis cubic logic and Ulam-Rényi games*, in: **Algebraic Combinatorics and Computer Science - A Tribute to Giancarlo Rota**, D. Senato and H. Crapo (Eds.), Springer-Verlag, pp. 197–244, 2000.

Volumes Edited

7. **Combinatorial Pattern Matching - 26th Annual Symposium, CPM 2015**, Lecture Notes in Computer Science, vol. 9133, 2015 (co-edited with E. Porat and U. Vaccaro).
8. **Group Testing and Compressed Sensing**, *Special Issue of Algorithmica*, vol. 67, Issue 3, 2013 (co-edited with E. Porat)
9. **Information Theory, Combinatorics, and Search Theory**, Lecture Notes in Computer Science, vol. 7777, 2013 (co-edited with H. Aydinian and C. Deppe).
10. **Search Methodologies**, *Dagstuhl Seminar Proceedings*, vol. 09281, Schloss Dagstuhl - Leibniz-Zentrum für Informatik, Germany, 2009 (co-edited with R. Ahlswede and U. Vaccaro).
11. **1st International Workshop on Combinatorics of Searching, Sorting, and Coding (COSSAC'01)**. *Special Issue of Discrete Applied Mathematics*, vol. 137, Issue 1, 2004 (co-edited with D. Mundici and U. Vaccaro).

In Journals

12. L. Marzari, F. Leofante, F. Cicalese, A. Farinelli, *Probabilistically robust counterfactual explanations under model changes*, **Artificial Intelligence**, vol. 351: 104459, 2026.
13. F. Cicalese, F. Ugazio, *Hardness and approximability of bounded access Lempel Ziv coding*, **Information and Computation**, vol. 307: 105366, 2025.

¹According to a 2006 Page rank study, IEEE Transactions on Information Theory was deemed the most prestigious among hundreds of computer science related journals and the leading one in coding theory and information theory.

14. L. Marzari, F. Cicalese, A. Farinelli, *Probabilistically Tightened Linear Relaxation-based Perturbation Analysis for Neural Network Verification*, **Journal of Artificial Intelligence Research**, vol. 84, 2026.
15. V.F. Souza, F. Cicalese, E. Laber, M. Molinaro, *Decision trees with short explainable rules*, **Theoretical Computer Science**, vol. 1047, pp. 115344, 2025.
16. M. Bicego, F. Cicalese, *Computing Random Forest-distance in the presence of missing data*, **ACM Transactions on Knowledge Discovery from Data**, vol. 18, n. 180:1-18, 2024.
17. M. Bicego, F. Cicalese, A. Mensi, *RatioRF: a novel measure for Random Forest clustering based on the Tversky's ratio model*, **IEEE Transactions on Knowledge and Data Engineering Theory**, vol. 35, pp. 830-841, 2023.
18. A. Caucchiolo, F. Cicalese, *Hardness and approximation of multiple sequence alignment with column score*, **Theoretical Computer Science**, vol. 946, pp. 113683, 2023.
19. F. Cicalese, E. Laber, *On the star decomposition of a graph: Hardness results and approximation for the max-min optimization problem*, **Discrete Applied Mathematics**, vol. 289, pp. 503-515, 2021.
20. F. Cicalese, Zs. Lipták, M. Rossi, *On infinite prefix normal words*, **Theoretical Computer Science**, vol. 859, pp. 134-148, 2021.
21. F. Cicalese, E. Laber, *Information Theoretical Clustering is Hard to Approximate*, **IEEE Transactions on Information Theory**, vol. 67 (1), pp. 586-597, 2021.
22. F. Cicalese, M. Rossi, *On the multi-interval Ulam-Rényi game: For 3 lies 4 intervals suffice*, **Theoretical Computer Science**, vol. 809, pp. 339-356, 2020.
23. F. Cicalese, L. Gargano, U. Vaccaro, *Minimum-Entropy Coupling and Their Applications*, **IEEE Transactions on Information Theory**, vol. 65 (6), pp. 3436-3451, 2019.
24. H.K. Aydinian, F. Cicalese, C. Deppe, V.S. Lebedev, *A Combinatorial Model of Two-Sided Search*, **International Journal of Foundation of Computer Science**, vol. 29 (4), pp. 481-504, 2018.
25. F. Cicalese, Zs. Lipták, M. Rossi, *Bubble-Flip – A new generation algorithm for prefix normal words*, **Theoretical Computer Science**, vol. 743, pp. 38-52, 2021.
26. F. Cicalese, L. Gargano, U. Vaccaro, *Bounds on the entropy of a function of a random variable and their applications*, **IEEE Transactions on Information Theory**, vol. 64 (4), pp. 2220-2230, 2018.
27. F. Cicalese, E. Laber, A. Saettler, *Decision Trees for Function Evaluation: Simultaneous Optimization of Worst and Expected Cost*, **Algorithmica**, vol. 79 (3), pp. 763-796, 2017.
28. A. Saettler, E. Laber, F. Cicalese, *Trading Off Worst and Expected Cost in Decision Tree Problems*, **Algorithmica**, vol. 79 (3), pp. 886-908, 2017.
29. F. Cicalese, B. Keszegh, B. Lidický, D. Pálvölgyi, T. Valla, *On the tree search problem with non-uniform costs*, **Theoretical Computer Science**, vol. 647, pp. 22-32, 2016.
30. F. Cicalese, M. Milanič, R. Rizzi, *On the complexity of the vector connectivity problem*, **Theoretical Computer Science**, vol. 591, pp. 60-71, 2015.
31. F. Cicalese, E. Laber, A. Saettler, *Approximating decision trees with value dependent testing costs*, to appear in **Information Processing Letters**, vol. 115, pp. 594-599, 2015.
32. F. Cicalese, G. Cordasco, L. Gargano, M. Milanič, G. Peters, U. Vaccaro, *Spread of Influence in Weighted Networks under Time and Budget Constraints*, **Theoretical Computer Science**, vol. 586, pp. 40-58, 2015.
33. F. Cicalese, T. Jacobs, E. Laber, M. Molinaro, *Improved Approximation Algorithms for the Average-Case Tree Searching Problem*, **Algorithmica**, vol. 68 (4), pp. 1045-1074, 2014.
34. F. Cicalese, *Perfect Strategies for the Ulam-Rényi Game with Multi-interval Questions*, **Theory of Computing Systems**, vol. 54, pp. 578-594, 2014.
35. F. Cicalese, G. Cordasco, L. Gargano, M. Milanič, U. Vaccaro, *Latency-bounded target set selection in social networks*, **Theoretical Computer Science**, vol. 535, pp. 1-15, 2014.

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Verona, September 3, 2026

Ferdinando Cicalese

**DICHIARAZIONE SOSTITUTIVA DI CERTIFICAZIONE
E/O SOSTITUTIVA DELL'ATTO DI NOTORIETÀ**

Il sottoscritto Ferdinando Cicalese, nato a Sarno (SA) il 31 Maggio 1972 e residente in Verona, via B. Giuliani 2/F, telefono 3204640713, codice fiscale CCLFDN72E31I438C

DICHIARA

che tutti i fatti e gli stati indicati nel curriculum sono da ritenersi dichiarati ai sensi e per gli effetti degli artt. 46 e/o 47 del D.P.R. 445/2000, con consapevolezza delle sanzioni penali nel caso di dichiarazioni non veritiere e falsità negli atti, richiamate dall'art. 76 del DPR 445/2000.

Verona, September 3, 2026

Ferdinando Cicalese