

Short Curriculum Vitae



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Paolo Ferragina is Full Professor of Computer Science at the Sant'Anna School of Advanced Studies and at the University of Pisa, where he has founded and leads the Acube Lab (*Advanced Algorithms and Applications*, <http://acubelab.di.unipi.it>), in which researchers design algorithms and AI tools for the compressed storage, mining and search of information in large amounts of data. A3Lab has current or past collaborations with major companies worldwide: such as Google, European Broadcasting Union (EBU), Bloomberg, Yahoo!, ST Microelectronics, Huawei, Catalog DNA, SadasDB, etc.

He got his PhD in Computer Science from the University of Pisa, and the Post-doc from the Max-Planck Institut für Informatik (Saarbrücken, Germany). Then he joined the Department of Computer Science of the University of Pisa, where he is full professor since 2007. His professorship was initially sponsored by Yahoo! with a Faculty Award from 2006 to 2010 (the first in Europe at that time) because of his scientific achievements on the topic of Compressed and I/O-efficient data structures.

He has spent research periods in academia and companies worldwide: MGH/Harvard Medical School, Massachusetts Institute of Technology (MIT), Max Planck Institut fuer Informatik (Saarbrücken, DE), Courant Institute (NYU, New York), University of North Texas, IBM Research (Rome), AT&T Shannon Lab (Florham Park, NJ), Yahoo! Research (Barcelona), Google (Zurich).

He is currently:

- a member of the Scientific Advisory Committee of the Department on “Engineering, ICT and technologies for energy and mobility” of the National Research Council (CNR), which is composed of 19 Institutes, spread over 47 national sites, and more than 1000 researchers;
- a member of the *Italian Academy of Technology*, which is part of the European Council of Applied Sciences, Technologies and Engineering (Euro-CASE);
- a member of the Working Group on “AI and Justice”, established by the Ministry of Justice of Italy;
- a member of the Steering Committee of the SIAM Symposium on Algorithm Engineering and Experiments (ALENEX);
- a member of three PhD Steering Committees: the National PhD in Artificial Intelligence for Society; the Regional PhD in Computer Science of the University of Pisa-Florence-Siena, and the PhD in Health Science, Technology and Management of the Sant'Anna School of Advanced Studies;
- co-director of the International PhD School “Jacob T. Schwartz” on “Computational Social Sciences”, held every year in Lipari;

- a member of the Advisory Board of the Master in “Big Data Analytics & Artificial Intelligence for Society”, promoted by the University of Pisa and CNR, and with the contribution of Scuola Superiore Sant’Anna and Scuola Normale Superiore;
- a member of the Advisory Board of the Master in Informatics for Digital Health, University of Pisa;
- a member of the Editorial Board of the Journal on Graph Algorithms and Applications;
- and, finally, area editor of the Encyclopedia of Algorithms (Springer, Editor Ming-Yang Kao), and of the Encyclopedia of Big Data Technologies (Springer, Editor Zomaya and Sakr).

Among his previous institutional roles, we recall the most relevant ones:

- Vice-Rector on ICT at the University of Pisa (2019-2022).
- Panel member of the EU Committee for the evaluation of *ERC Advanced Grants* for the sector PE6-Computer Science and Informatics (2019).
- President of the Computer Science PhD joint program of the Universities of Pisa, Florence and Sienna (2017-2020).
- Vice-Rector on “Applied Research and Innovation” at the University of Pisa (2010-2016).
- President of the IT Center of the University of Pisa, which has been recognized by Dell and Intel as a worldwide competence center on Cloud and HPC, and by Microsoft as Transform Data Center (2009-2015).

He is the author of more than 200 publications in peer-reviewed journals and conferences about Theoretical Computer Science and Information Retrieval, with an H-index on Google Scholar of 44 and more than 12k citations. He co-authored two Italian books: one on Cryptography (Bollati Boringhieri, 2001 and 2007; now UniPI Press, 2015), and one on Computational Thinking (Il Mulino, 2017), which has been translated into English and published by Springer (2018 and 2024). In 2023, he published a book for Cambridge University Press on “Pearls of Algorithm Engineering”. He is also the co-author of 6 (inter-)national patents owned by companies and universities.

Thanks to his scientific achievements, he has been the (co-)recipient of the following international awards:

- co-recipient of the “*2023 ESA Test of Time award*” for his paper on “Engineering a Lightweight Suffix Array Construction Algorithm”, published in the Proceedings of the European Symposium on Algorithms 2002. The “Test of Time award” recognizes: “*papers from ESA proceedings from 19-21 years prior that have best met the “test of time”..*”
- co-recipient of the “*2023 ACM CIKM Test of Time award*” for his paper on “TAGME: on-the-fly annotation of short text fragments (by wikipedia entities)”, published in the Proceedings of ACM CIKM 2010. The “Test of Time award” is given for: “*CIKM papers published at least ten years ago, and that have had an important and sustained impact on the research community*”.
- co-recipient of the “*2022 ACM Paris Kanellakis from theory to practice*”, with the motivation “for inventing the BW-transform and the FM-index that opened and influenced the field of Compressed Data Structures with fundamental impact on Data Compression and Computational Biology”.
- Google Cloud Research Innovator (2022).
- Google (EMEA) Educator grant award for spreading the Computational Thinking among teachers and students of high-schools (2018).
- three Google research awards (2010, 2012 and 2016);

- “top-100 renowned scientists” according to Google EMEA, because of his research on Search Engines and Information Retrieval (2012);
- “Philip Morris Award on Science and Technology” (1997).

He also has been the recipient of “*Ordine del Cherubino*” (2019), assigned by the University of Pisa to distinguished Professors in scientific and professional activities; and “*Pegaso d’Argento*” (2023), assigned by the Tuscan Region for scientific achievements.

He has been invited as a speaker at many international conferences on the topic of Algorithmics and Information Retrieval. Among the others, we mention the invited talk at the Scientific Symposium on “30 Years of Max Planck Institute for Informatics”, end of November 2023.

He has been a member of the steering committee or co-chair of several international conferences. And he has been and is the Principal Investigator of international projects involving companies and universities, among the current ones we mention the projects with the Software Heritage Archive and UNESCO (funded by the Sloan Foundation), the European Broadcasting Union (EBU), and the EU Research Infrastructure on Big Data & AI.

He has advised more than 80 bachelor’s and master’s theses, and 19 PhD theses, of which 4 are currently under development. His PhD students found positions in Academia and top companies such as Google and Bloomberg. Moreover, some of his students got two “*Best Italian PhD Thesis in Theoretical Computer Science*” from the Italian Chapter of the European Association on TCS (EATCS), and the national prize “*ConScienze 2020*” for the best Master thesis in Computer Science.

Further info about his publication track record is at <https://dblp.org/pid/f/PaoloFerragina.html>.