Arianna Dagliati

Appointments

2022 - Present Tenure Track Assistant Professor (RTDb), Department of Electrical, Computer and Biomedical Engineering. University of Pavia.
Promotion to RTDb (October 2022).

2021 - 2022 Assistant Professor (RTDa), Department of Electrical, Computer and Biomedical Engineering. University of Pavia.

Projects' participation and roles:
- Lombardy FRRB project INTESTRAT-CAD (INTEgrated STRAtification Tools in Coronary Artery Disease): Co-leader (with Prof. Riccardo Bellazzi) of the work-package focused on artificial intelligence and electronic phenotyping.
- Horizon2020 project BrainTeaser (Bringing Artificial Intelligence home for a better care of amyotrophic lateral sclerosis and multiple sclerosis): Co-leader (with Prof. Riccardo Bellazzi and Dr. Roberto Bergamschi) of the work-package for the integration of environmental data in models for the evolution of MS and progression of ALS.
- 4CE Consortium for the Clinical Characterization of COVID-19: Co-leader (with prof. Shawn Murphy and prof. Tianxi Cai) of the study groups for Post-acute Sequelae of COVID-19 and Thrombotic events analyses.
- Horizon2020 project Periscope (Pan-European Response to the Impacts of COVID-19 and future Pandemics and Epidemics): Scientific collaborator for the development of modelling approaches to identify potential best practices

2020 –2021 Research Fellow, Department of Electrical, Computer and Biomedical Engineering. University of Pavia

Lombardy FRRB project INTESTRAT-CAD (INTEgrated STRAtification Tools in Coronary Artery Disease): Project and team member.
Activities: Application of Machine Learning techniques for the detection and early identification of coronary artery disease high-risk phenotypes.
Integration of multi-omics and advance coronary imaging for risk stratification in coronary atherosclerosis.

2019 –2020 Research Fellow, Division of Informatics, Imaging & Data Sciences, The University of Manchester, UK.
Promotion to Research Fellow (August 2019).

2017 -2019 Post-Doctoral Research Associate, Manchester Molecular Pathology Innovation Centre, Division of Informatics, Imaging & Data Sciences, The University of Manchester, UK

MRC funded Manchester Molecular Pathology Innovation Centre: person in charge of the Health Informatics and Machine Learning tasks.
Activities:
- Application of advanced analytics techniques (such as Latent Class Trajectory modelling, Topological Data Analysis) to discover temporal phenotypes in inflammatory diseases and jointly study omics and clinical data.
- Behavioral assessment of hearing through face recognition in children, in collaboration with the Manchester Centre for Audiology and Deafness;
- UK biobank-based project for a precision medicine approach for treatment and prevention of Alzheimer's disease using statins in collaboration with Prof. Roberta Brinton (University of Arizona)

2016 –2017 Post-Doctoral Research Assistant, Clinical and Scientific Institute S.Maugeri of Pavia
Activities: Implementation of software solutions to gather and analyze data within the project Inherited arrhythmia: clinical characterization, genetic geography and experimental studies in the Calabria Region isolate.

2009 - 2012 Data Analyst, Institute for Advanced Study of Pavia (IUSS)
Activities: Implementation of an i2b2 based architecture to support clinical research and integrate EHR, Biobank and Hospital Information System data supporting translational research in oncology.

2008 - 2010 Scholarship, University of Pavia and Clinical and Scientific Institute S.Maugeri of Pavia .
Activities: Development of a model for multi-disciplinary rehabilitative paths for the rehabilitation of breast cancer patients via muscular fatigues measurements.

2007 - 2009 Junior Data Analyst, Local Health Care Agency of Pavia

Activities: Management of the Anatomy pathology Lombardy network. Pre-processing, analysis and reporting of administrative data aimed at improving the management of healthcare policy.

Education and Qualifications

May 2021 Associate Professor (Fascia II) Italian National Qualification
Bando D.D. 2175/2018 – valid from 04/05/2021 to 04/05/2030
Settore Concorsuale 09/G2 Bioingegneria

Since 2019 New Academics and Fellows Programme at the University of Manchester

Accredited by the Higher Education Academy (HEA) successful completion of the programme will entitle to become a Fellow of the HEA.

Completed courses: Enhancing Research Publications, Research Grant Applications, Career Networking and Profile Raising, Undertaking Ethical Research, Media Engagement. Programme interrupted due to relocation.

2013-2016 Doctoral Program of Bioengineering and Bioinformatics– University of Pavia
Thesis: *Longitudinal Data Analytics for Clinical Decision Support in Type 2 Diabetes.* Supervisor: Dr. Lucia Sacchi.
My PhD was funded through the MOSAIC EU project, dedicated to provide new approaches to clinicians, for the diagnosis and the follow up of the chronic population with diabetes.
My thesis embraces the following topics: (i) design of a data model to integrate temporal multivariate data from heterogeneous sources, (ii) development of predictive models and longitudinal analytics methods to determine external factors influencing the progression of Type 2 Diabetes, and (ii) integration of the developed models into a dashboard-based clinical decision system to enhance the diabetic disease management.

During my PhD I collaborated with Professor J.H. Holmes in the University of Pennsylvania, Department of Biostatistics and Epidemiology. I have spent two months in the Department in March/May 2015 and six months in March/September 2016 as visiting scholar.

* The thesis was awarded the "Marco Ramoni" award for doctoral dissertation 2017, National Bioengineering Group (GNB), Italy

* The MOSAIC project implementation based on my thesis won the Digital Innovation in Health Care 2016/2017, Politecnico of Milano, School of Management

2011-2012 Master in Complex Action - International School for Advanced Studies (SISSA, Trieste)
Fields of Interest: Analysis of complex processes and Business Administration, Food Issue. Main Courses: Accounting, Project and Risk management, Technology Transfer, Sustainability and Leadership in complex scenarios.
Final project (Business plan): *EATIE, a platform to share healthy and sustainable food behaviors.*

2005-2007 Master Degree in Biomedical Engineering University of Pavia (110/110)
Thesis: *Design and implementation of an electronic medical record to improve intensive care units' efficacy.* Supervisor: Prof. Riccardo Bellazzi.
Thesis done at Mario Negri Institute for Pharmacological Research.

2001-2004 Bachelor Degree in Biomedical Engineering University of Pavia (104/110)
Thesis: *Application of Temporal Abstraction to predict patients' stay in Intensive Care Unit.* Supervisor: Prof. Riccardo Bellazzi.

In 2004, after my Bachelor Degree, I have spent four months in the Medical Informatics department of the Academisch Medisch Centrum of Amsterdam to finalize a data mining project on monitoring data in intensive care units, under supervision of Dr. N. Peek and Professor A. Abu-Hanna.

1997 -2001 Classical High School A. Doria, Novi Ligure, Italy (100/100)
Final project: *The role of women in history, form Calpurnia to Partisan Women.*
Main Subjects: Latin and Greek Literature, Italian Literature, History and Philosophy, Art History.

Prizes from Scientific Societies

- PhD thesis awarded with the "Marco Ramoni" award for doctoral dissertation 2017, National Bioengineering Group (GNB), Italy
- I received the 2021 AIME (society of AI in medicine) Rising Star prize.

Other evidence of Academic and Professional Standing

Journal Editorial Board

- Part of JBI (Journal of Biomedical Informatics) Editorial Board since 2023

Board membership

- Appointed as AIME (society of AI in medicine) Board Member since June 2021

Chair and Program committee member

- President of the University of Pavia Doctoral final examination committee in Bioengineering, Bioinformatics and Health Technologies, academic year 2023/2024.
- Editorial Board Committee of IEEE EMBC 2024 “Technology for Women & Children’s Health/Equity and Access for Well-health”
- Doctoral Consortium Chair for AIME 2022
- Publicity Chair for SIAM International Conference on Data Mining 2023

- Part of the program committee of Artificial Intelligence in Medicine (since 2017)
- Part of the program committee of IEEE International Conference on Healthcare Informatics (since 2017)
- Part of the program committee of IEEE CBMS International Symposium on Computer-Based Medical Systems (since 2019)

Peer Review

Since 2015, I have reviewed 100 manuscripts for several journals including Journal of Biomedical Informatics, BMC Medical Informatics and Decision Making, IEEE Journal of Biomedical and Health Informatics, International Journal of Medical Informatics, Plos One, Artificial Intelligence in Medicine, BMJ Open, Briefing in Bioinformatics, Scientific Report, Patterns, The Lancet Digital Health, npj Digital Medicine.

Peer Review profile is available:

https://www.webofscience.com/wos/author/record/570223

Grant Review

- 2019, Innova Molise Review of 2 grant proposals– Technology Innovation EU funds
- 2019, Barts Charity Grant Review - Strategic Research Grant
- 2020, Israel Science Foundation Grant Review - Personal Research Grants
- Since 2022, European Science Foundation Reviewer for Research Foundation Flanders' Post-doctoral projects
- Invited to Evaluation of the EU H2020 call for the European Cancer Patient Digital Centre, TBC.

Leadership and Management Roles

- I was in charge for the ONCO-i2b2 project's management, and I provided administrative support (2009-2012)
- I was part of the organization and scientific committee of the Workshop NETTAB 2011, dedicated to the Clinical Bioinformatics.
- I co-organized the course "Clinical Bioinformatics" for Medical Students near "Collegio Ghislieri" of Pavia from 2013 to 2016.
- As part of the MOSIAC EU Project's consortium, I was responsible for deliverables' production for the work package dedicated to predictive modelling and temporal analytics. I actively participate in the scientific management of the project during internal and plenary meetings.
- Since 2020 I have organized the "Machine Learning Fridays" series of seminars near the Department of Electrical, Computer and Biomedical Engineering of the University of Pavia

Knowledge and Technology Transfer

- I collaborated within the Process mining for healthcare initiative to draft their manifesto, and to integrate my algorithm in a collaborative software library (pMineR)
- I have collaborated with the i2b2 team and participated to annual meetings with the academic research group for the development of innovative solutions for Translational Research in Medicine (i2b2 and Shrine)

Teaching

Formal Assignments

Current Courses

- Since 2023/24 academic year – tech the course Medical Application And Health-Care for the degree in Artificial Intelligence, an inter-university course in collaboration of the University of Pavia, Milan Bicocca and Milan Statale. 3CFU
- Since the 2022/23 academic year – teach the course Machine Learning and Artificial Intelligence for the MEET Master near the University of Pavia (Italy). 3 CFU
- Since the 2021/22 academic year – teach the course Advanced Methods for Biomedical Data Mining near the University of Pavia (Italy). 3 CFU
- Since 2020/2021 academic year – teach the course General Informatics for "Corsi di Laurea delle Professioni Sanitarie Tecniche" near the University of Pavia (Italy). 1 CFU.

Previous courses

- 2019 - teaching on Causal Reasoning, as part of the Biomedical Modelling for Health Data course (IIDS67642) of the MSc in Health Data Science (UK)
- 2019 – teaching on Process mining – UCL, London, as part of the MSc Health Informatics joint award between the University of Manchester and University College London (UK)

Assistance

- 2021 – assistant teaching in the Advanced Methods in Biomedical Data Mining. R practical part and missing data. The course was co-held by Prof. Lucia Sacchi (University of Pavia) and Prof. John H. Holmes (Perelman School of Medicine, UPenn)
- 2016 – assistant teaching in the Advanced Methods in Biomedical Data Mining, R practical part. The course was co-held by Prof. Riccardo Bellazzi (University of Pavia) and Prof. Stefano Monti (Boston University)

Supervision of Research Students

PhD students

Currently supervising 3 PhD students.

- Giuseppe Albi, National PhD in Artificial Intelligence (Health and Life Sciences Area) - XXXVII cycle a.y. 2021-2022
  Main research area: Graph representation learning for multimodal data integration.

- Mahin Vazifehdan, PhD student in Bioengineering and Bioinformatics at the University of Pavia Ciclo XXXVIII cycle a.y. 2022/2021
  Main research area: Multiple sclerosis progression modeling via continuous time approaches.

- Gabriele Santangelo, National PhD in Artificial Intelligence (Health and Life Sciences Area) - XXXIX cycle a.y. 2023-2024
  Main research area: Decision-Support System Using Simulations of Rehabilitation Scenarios, Synthetic Data generation.

- In 2018 I have co-supervised a PhD student (Dr. Kathryn A McGurk) for 3 months, in collaboration with Prof. Anthony Whetton (University of Manchester) on the use of Machine Learning techniques to analyse proteomics data.
  Research output: Kathryn A McGurk, Arianna Dagliati, et al., The use of missing values in proteomic data-independent acquisition mass spectrometry to enable disease activity discrimination, Bioinformatics, Volume 36, Issue 7, 1 April 2020,
- In 2018 I have co-supervised a visiting PhD student (Dr. Lorenzo Chiudinelli) from University of Pavia, in collaboration with Prof. Niles Peek (University of Manchester) on the development of a software tool to derive temporal phenotypes in breast cancer with process mining techniques.
  Research output: Chiudinelli L, Dagliati A, et al.. Mining post-surgical care processes in breast cancer patients. Artif Intell Med. 2020 May;105:101855. doi: 10.1016/j.artmed.2020.101855. Epub 2020

Master and Bachelor Students

- Since 2021 I have formally supervised seven master students, thesis titles:
    - Trajectories Mining For Temporal Phenotyping Of ALS Patients Using Predictive Clustering (in collaboration with Lisbon University, within the Erasmus+ program)
    - Quality assessment of synthetic data in healthcare: development of a web application to evaluate resemblance, utility and privacy
    - Integration of Clinical and Environmental Data For The Study of The Progression of Multiple Sclerosis
    - Unsupervised learning approaches for analysis and comparison of phenotypes and endotypes in coronary artery disease (Approcci di apprendimento non supervisionato per l'analisi e il confronto di fenotipi ed endotipi nella malattia coronarica)
    - Land use regression models for predicting air pollutant values and defining exposure trajectories in urban settings (Modelli di land use regression per la predizione di valori di inquinanti atmosferici e la definizione di traiettorie di esposizione in contesti urbani)
    - A software suite to support the process mining computational pipeline (Una suite software di supporto alla process mining computational pipeline)
    - Machine Learning framework to define and predict temporal phenotypes in Post-Acute Sequelae of COVID-19 (PASC)

- In 2020/2021 I have co-supervised one master student and two bachelor students at the University of Pavia, in collaboration with Prof. Riccardo Bellazzi (University of Pavia)
- In 2019/2020 I have co-supervised two Master Students in collaboration with Prof. Riccardo Bellazzi (University of Pavia) on the application of topological data analysis on proteomics data and on the analysis of time series for behavioural pattern recognition.
  Reaserch Output: Arioli A, Dagliati A, Geary B, Peek N, Kalra PA, Whetton AD, Geifman N. OptiMissP: A dashboard to assess missingness in proteomic data-independent acquisition mass spectrometry. PLoS One. 15;16(4):e0249771. (2021)
- In 2018 I have co-supervised a Master Students in collaboration with Prof. Carlo Combi (University of Verona) on the application of latent class mixed models to retrieve temporal phenotypes.
  Reseorch output: B Amico, A Dagliati, D Plant, A Barton, N Peek, N Geifman. A Dashboard for Latent Class Trajectory Modeling: Application in Rheumatoid Arthritis. Studies in health technology and informatics 264, 911-9151 (2019)
- During my PhD (2013/2017) I have co-supervised five bachelor students and two master students near the Laboratory for Biomedical Informatics "Mario Stefanelli", University of Pavia in collaboration with Prof. Riccardo Bellazzi and Prof. Lucia Sacchi

Scientific collaborations and participation to national and international research projects

Project Name	Funding Agency	Role in the Project	Participants
Rete anatomie patologiche lombarde (2007-2009)	Regione Lombardia	Junior researcher	ASL Pavia, Policlinico San Matteo Pavia, Istituto Nazionale dei Tumori
Onco-OnReahb, Definizione di un modello di percorso riabilitativo multidisciplinare e costituzione di un osservatorio nazionale di riabilitazione oncologica (2008-2010)	Programma straordinario per la ricerca oncologica, Ministero della Salute	Member of the research team	Fondazione S. Maugeri - Clinica del lavoro e della riabilitazione, Universita' degli Studi di Pavia
Metodologie E Tecnologie Bioinformatiche Per L'integrazione Di Informazioni Cliniche E Conoscenze Biologiche A Supporto Della Ricerca Translazionale In Oncologia (Onco-I2b2) (2009-2012)	Regione Lombardia	Member of the research team	Fondazione S. Maugeri - Clinica del lavoro e della riabilitazione, I.U.S.S. - Istituto Universitario di Studi Superiori - PAVIA, Universita' degli Studi di Pavia

Project Name	Funding Agency	Role in the Project	Participants
MOSAIC (Models and simulation techniques for discovering diabetes influence factors) (2013-1016)	EU, FP7	Member of the research team	Medtronic Ibérica SA Università degli Studi di Padova, Universidad Politecnica de Madrid, Fondazione Salvatore Maugeri, AEDEC, Lund University, TSB, Folkhalsan Research Center, University of Athens
Manchester Molecular Pathology Innovation Centre (MMPathIc) (2017-2020)	MRC UK	Member of the research team	University of Manchester
MATURA (MAximising Theraputic Utility for Rheumatoid Arthritis) (2017-2020)	Versus Arthritis, MRC	Scientific Collaborator	Queen Mary University London, University of Manchester
A precision medicine approach for treatment and prevention of Alzheimer's disease using statins (2018-2021)	University of Arizona	Member of the research team	University of Arizona, University of Manchester
NIHR Biomedical Research Centre: Hearing Health Theme (2018-2020)	NIHR	Member of the research team – Referent for Machine Learning Reaserch	University of Manchester

Project Name	Funding Agency	Role in the Project	Participants
4CE Consortium for Clinical Characterization of COVID-19 by EHR data-driven studies (since 2020)	NIH funds requested	Member of the consortium, Work-package co-leader	The project is coordinated by the Harvard University. Full participants list: https://www.covidclinical.net/members/index.html
INTESTRAT-CAD (INTEgrated STRAtification Tools in Coronary Artery Disease) (2019-2024)	Fondazione Regionale per la Ricerca Biomedica	Work-package co-leader	Centro Cardiologico Monzino, Istituto Clinico Humanitas, IFOM, Policlinico San Matteo, University of Pavia
Brainteaser, Bringing artificial intelligence home for a better care of amyotrophic lateral sclerosis and multiple sclerosis. (2020-2025)	H2020	Work-package co-leader	Universidad Politecnica De Madrid , Universita Degli Studi Di Padova , Universita Degli Studi Di Torino , Instituto De Medicina Molecular Joao Lobo Antunes , Servicio Madrileno De Salud , Fondazione Istituto Neurologico Nazionale Casimiro Mondino
Periscope (Pan-European Response to the Impacts of COVID-19 and future Pandemics and Epidemics) (2020-2023)	H2020	Scientific Collaborator	The Project involves 31 participants. I collaborate with Fondazione Irccs Policlinico San Matteo, Assistance Publique Hopitaux De Paris And Universidad Politecnica De Madrid

Big data, internet-of-things and aRtificial intelligence to study the impact of personal Exposure to Air pollution on asTHma Exacerbations (BREATHE) (2023-2025)	PRIN: PROGETTI DI RICERCA DI RILEVANTE INTERESSE NAZIONALE	Co-i	Università degli Studi di PADOVA, Università degli Studi di PALERMO

Grants funding

- Co-I for William Demant Oticon Foundation, project: Next-generation paediatric hearing assessment: optimising behavioural testing and development of automated classification of responses. Fund GBP 250,000. Successful.

Conference and workshop presentations

Invited Speaker

- CIBB 2023, University of Padova, Keynote "Developments in Medical Informatics: Responsible Approaches and Reliable Systems"
- University of Pennsylvania, Perelman School of Medicine, Institute for Biomedical Informatics (IBI) 2022. Seminar: Data Analytics for Temporal Phenotyping: Careflow Mining and Topological Data Analysis approaches.
- Digital Health Society Summit, 2022. Panel Speaker, Health data for smarter, more resilient and sustainable cities
- AIME 2022, Halifax. "Rising Star" talk. Combine Machine Learning and Medical Knowledge for Temporal Phenotyping
- IEEE Healthcare Summit 2021: Panel Speakers, "International EHR data to Conduct Collaborative COVID-19 Research: is Health Informatics Inclusive by Design?"
- American Diabetes Association 80th Scientific Session 2020. "Use of AI to Screen for Complications" within the Artificial Intelligence, Machine Learning, and Diabetes session.
- University of Manchester, 2018 Informatics for Stratified Medicine and Biomarker Discovery: Research symposium. Unsupervised sub-groups discovery using Topological Data Analysis

Panel presentations

- MIE 2022, Nice. “Explainability, Causability, Causality, Reliability: The many facets of ``good" explanations in XAI for health.” Panel participant: Brent Mittlestadt (University of Oxford), Riccardo Guidotti (University of Pisa), Niels Peek (The University of Manchester), Andreas Holzinger (Medical University of Graz, Austria)

- AMIA 2021 Annual Symposium. “Temporal Phenotypic Pathways of Post-Acute Sequelae of SARS-CoV-2 by an International Consortium for Clinical Characterization of COVID-19 (4CE)”. Panel participants: Shawn N. Murphy (Harvard Medical School), Hossein Estiri (Harvard Medical School), Riccardo Bellazzi (Univeristy of Pavia), John H. Holmes (Perelman School of Medicine, UPenn)

Oral presentations

- IEEE BHI, Valencia, 1- 4 Giugno 2014 Dagliati A, Sacchi L, Cerra C, Leporati P, De Cata P, Chiovato L, Holmes, JH, Bellazzi R. Temporal data mining and process mining techniques to identify cardiovascular risk-associated clinical pathways in Type 2 diabetes patients. 2014 IEEE-EMBS International Conference on Biomedical and Health Informatics, BHI 2014; Valencia; Spain; 1 - 4 June 2014; Article number 6864348, Pages 240-243.
- IEEE BHI, Valencia, 1- 4 Giugno 2014 Dagliati A, Sacchi L, Bucalo M, Segagni D, Zarkogianni K, Millana AM, Cancela J, Sambo F, Fico G, Barreira MT, Cerra C, Nikita K, Cobelli C, Chiovato L, Arredondo MT, Bellazzi R. A data gathering framework to collect Type 2 diabetes paients data. 2014 IEEE-EMBS International Conference on Biomedical and Health Informatics, BHI 2014; Valencia; Spain; 1 - 4 June 2014; 2014, Article number 6864349, Pages 244-247.
- Nov 15, 2014, Washington, DC AMIA Workshop on Data Mining for Medical Informatics 2014 (http://www.dmmh.org/dmmi14). Mining Careflows of Breast Cancer Patients.
- Nov 15, 2014, Washington, DC AMIA Workshop on Data Mining for Medical Informatics 2014 (http://www.dmmh.org/dmmi14). Risk-Associated Temporal Clinical pathways in T2D Patients.
- HEALTHINF 2016 - 9th International Conference on Health Informatics, Proceedings; Part of 9th International Joint Conference on Biomedical Engineering Systems and Technologies. Learning T2D evolving complexity from EMR and administrative data by means of Continuous time Bayesian networks. BIOSTEC 2016 2016, Pages 338-344
- AMIA Symposium 2016, Nov 12 - 16, Chicago. Hierarchical Bayesian Logistic Regression to forecast metabolic control in type 2 DM patients. Annual Symposium proceedings. AMIA Symposium. Volume 2016, 2016, Pages 470-479
- Jodrell Bank Centre for Astrophysics (JBCA) Machine Learning Workshop, University of Manchester, 13 Nov 2018 15 Nov 2018. Use of Topological Data Analysis approaches to tackle precision medicine issues. Application of unsupervised methods to identify temporal phenotypes. (https://jbca-machinelearning.github.io/index.html)

- 17th Conference on Artificial Intelligence in Medicine, AIME 2019; Poznan; Poland; 26 June 2019 through 29 June 2019; Code 227519
  Inferring temporal phenotypes with topological data analysis and pseudo time-series. Volume 11526 LNAI, 2019, Pages 399-409
- MEDINFO 2019. Aug 25-30 2019 Lyon. A Dashboard for Latent Class Trajectory Modeling: Application in Rheumatoid Arthritis. Volume 264: MEDINFO 2019: Health and Wellbeing e-Networks for All

Poster presentations

- 14th Annual Diabetes Technology Meeting, from November 6 to November 8, 2014, Bethesda.
  Cardiovascular-Risk-Associated Qualitative Pathways in Type 2 Diabetes Patients
  A Multivariate Data-Driven Model to Investigate the Arising of Complications in Type 2 Diabetes Patients
  Temporal Association Rules for Stratification of Type 2 Diabetes Patients
- 15th Annual Diabetes Technology Meeting, from October 22 to October 24, 2015, Bethesda.
  Metformin Exposure Patterns Are Related to Type 2 Diabetes Nephropathy
  Predicting Microvascular Complications from Type 2 Diabetes Retrospective Data

Outreach and public engagement

- I was invited to present at the Barclays AI Frenzy x Manchester Futurists, AI in Healthcare in March 2018 as part of One HealthTech, where I discussed "Machine Learning for Digital Health Science"
- Engagement in public dissemination activities: British Science Week March 2019, Manchester Science Festival October 2019
- I participated to the UK Health Data Analytics Network workshop on health data analytics to build the UK-HDAN Roadmap

Publications

Scopus profile https://www.scopus.com/authid/detail.uri?authorId=57192824262

70 Documents by author
1,172 Citations by 1,072 documents
17 h-index

Journal publications

Authors	Title	Year	Source title
Gerbasi A.; Dagliati A.; Albi G.; Chiesa M.; Andreini D.; Baggiano A.; Mushtaq S.; Pontone G.; Bellazzi R.; Colombo G.	CAD-RADS scoring of coronary CT angiography with Multi-Axis Vision Transformer: A clinically-inspired deep learning pipeline	2024	Computer Methods and Programs in Biomedicine
Dagliati A.; Strasser Z.H.; Hossein Abad Z.S.; Klann J.G.; et al. The Consortium for Clinical Characterization of COVID-19 by EHR (4CE)	Characterization of long COVID temporal sub-phenotypes by distributed representation learning from electronic health record data: a cohort study	2023	eClinicalMedicine
Tan A.L.M.; Getzen E.J.; Hutch M.R.; Strasser Z.H.; Gutiérrez-Sacristán A.; Le T.T.; Dagliati A.; et al. The Consortium for Clinical Characterization of COVID-19 by EHR (4CE)	Informative missingness: What can we learn from patterns in missing laboratory data in the electronic health record?	2023	Journal of Biomedical Informatics
Zhang H.G.; Honerlaw J.P.; Maripuri M.; Samayamuthu M.J.; Dagliati A.; et al. The Consortium for Clinical Characterization of COVID-19 by EHR (4CE)	Potential pitfalls in the use of real-world data for studying long COVID	2023	Nature Medicine
Sperotto F.; Gutiérrez-Sacristán A.; Makwana S.; Li X.; Rofeberg V.N.; Cai T.; Bourgeois F.T.; Omenn G.S.; Dagliati A.; et al. The Consortium for Clinical Characterization of COVID-19 by EHR (4CE)	Clinical phenotypes and outcomes in children with multisystem inflammatory syndrome across SARS-CoV-2 variant eras: a multinational study from the 4CE consortium	2023	eClinicalMedicine
Orieux A.; Ferté T.; Jouhet V.; Dagliati A.; et al. The Consortium for Clinical Characterization of COVID-19 by EHR (4CE)	Acute respiratory distress syndrome after SARS-CoV-2 infection on young adult population: International observational federated study based on electronic health records through the 4CE consortium	2023	PLoS ONE
Tan B.W.L.; Tan B.W.Q.; Tan A.L.M.; Schriver E.R.; Dagliati A.; et al. The Consortium for Clinical Characterization of COVID-19 by EHR (4CE)	Long-term kidney function recovery and mortality after COVID-19-associated acute kidney injury: An international multi-centre observational cohort study	2023	eClinicalMedicine
Tavazzi E.; Longato E.; Vettoretti M.; Aidos H.; Trescato I.; Roversi C.; Martins A.S.; Castanho E.N.; Branco R.; Soares D.F.; Guazzo A.; Birolo G.; Pala D.; Bosoni P.; Chiò A.; Manera U.; de Carvalho M.; Miranda B.; Gromicho M.; Alves I.; Bellazzi R.; Dagliati A.; Fariselli P.; Madeira S.C.; Di Camillo B.	Artificial intelligence and statistical methods for stratification and prediction of progression in amyotrophic lateral sclerosis: A systematic review	2023	Artificial Intelligence in Medicine
Zhang H.G., Dagliati A. et al., The Consortium for Clinical Characterization of COVID-19 by EHR (4CE)	International electronic health record-derived post-acute sequelae profiles of COVID-19 patients	2022	npj Digital Medicine
Weber G.M., Hong C., Xia Z., Palmer N.P., Avillach P., L'Yi S., Dagliati A., et al. The Consortium for Clinical Characterization of COVID-19 by EHR (4CE)	International comparisons of laboratory values from the 4CE collaborative to predict COVID-19 mortality	2022	npj Digital Medicine
Wang X., Zhang H.G., Xiong X., Hong C, Dagliati A., et al., The Consortium for Clinical Characterization of COVID-19 by EHR 4CE	SurvMaximin: Robust federated approach to transporting survival risk prediction models	2022	Journal of Biomedical Informatics
Hong C.,et al., The Consortium for Clinical Characterization of COVID-19 by EHR (4CE),	Changes in laboratory value improvement and mortality rates over the course of the pandemic: an international retrospective cohort study of hospitalised patients infected with SARS-CoV-2	2022	BMJ Open

Dagliati A., Gatta R., Malovini A., Tibollo V., Sacchi L., Cascini F., Chiovato L., Bellazzi R.	A Process Mining Pipeline to Characterize COVID-19 Patients' Trajectories and Identify Relevant Temporal Phenotypes From EHR Data	2022	Frontiers in Public Health
Le T.T.,et al.., The Consortium for Clinical Characterization of COVID-19 by EHR (4CE)	Multinational characterization of neurological phenotypes in patients hospitalized with COVID-19	2021	Scientific Reports
Estiri H.,et al.., The Consortium for Characterization of COVID-19 by EHR (4CE)	Evolving phenotypes of non-hospitalized patients that indicate long COVID	2021	BMC Medicine
Weber G.M. et al.., The Consortium For Clinical Characterization Of COVID-19 By EHR (4CE)	International changes in COVID-19 clinical trajectories across 315 hospitals and 6 countries: Retrospective cohort study	2021	Journal of Medical Internet Research
Arioli A., Dagliati A., Geary B., Peek N., Kalra P.A., Whetton A.D., Geifman N.	OptiMissP: A dashboard to assess missingness in proteomic data-independent acquisition mass spectrometry	2021	PLoS ONE
Dagliati A., Malovini A., Tibollo V., Bellazzi R.	Health informatics and EHR to support clinical research in the COVID-19 pandemic: An overview	2021	Briefings in Bioinformatics
Kohane I.S. et al., The Consortium For Clinical Characterization Of COVID-19 By EHR (4CE)	What every reader should know about studies using electronic health record data but may be afraid to ask	2021	Journal of Medical Internet Research
Dagliati A., Peek N., Brinton R.D., Geifman N.	Sex and apoe genotype differences related to statin use in the aging population	2021	Alzheimer's and Dementia: Translational Research and Clinical Interventions
Dagliati A., Plant D., Nair N., Jani M., Amico B., Peek N., Morgan A.W., Isaacs J., Wilson A.G., Hyrich K.L., Geifman N., Barton A.	Latent Class Trajectory Modeling of 2-Component Disease Activity Score in 28 Joints Identifies Multiple Rheumatoid Arthritis Phenotypes of Response to Biologic Disease-Modifying Antirheumatic Drugs	2020	Arthritis and Rheumatology
Le Sueur H., Dagliati A., Buchan I., Whetton A.D., Martin G.P., Dornan T., Geifman N.	Pride and prejudice–What can we learn from peer review?	2020	Medical Teacher
Dagliati A., Geifman N., Peek N., Holmes J.H., Sacchi L., Bellazzi R., Sajjadi S.E., Tucker A.	Using topological data analysis and pseudo time series to infer temporal phenotypes from electronic health records	2020	Artificial Intelligence in Medicine
Nicora G., Vitali F., Dagliati A., Geifman N., Bellazzi R.	Integrated Multi-Omics Analyses in Oncology: A Review of Machine Learning Methods and Tools	2020	Frontiers in Oncology
Chiudinelli L., Dagliati A., Tibollo V., Albasini S., Geifman N., Peek N., Holmes J.H., Corsi F., Bellazzi R., Sacchi L.	Mining post-surgical care processes in breast cancer patients	2020	Artificial Intelligence in Medicine
McGurk K.A., Dagliati A., Chiasserini D., Lee D., Plant D., Baricevic-Jones I., Kelsall J., Eineman R., Reed R., Geary B., Unwin R.D., Nicolaou A., Keavney B.D., Barton A., Whetton A.D., Geifman N.	The use of missing values in proteomic data-independent acquisition mass spectrometry to enable disease activity discrimination	2020	Bioinformatics
Fico G., Hernanzez L., Cancela J., Dagliati A., Sacchi L., Martinez-Millana A., Posada J., Manero L., Verdú J., Facchinetti A., Ottaviano M., Zarkogianni K., Nikita K., Groop L., Gabriel-Sanchez R., Chiovato L., Traver V., Merino-Torres J.F., Cobelli C., Bellazzi R., Arredondo M.T.	What do healthcare professionals need to turn risk models for type 2 diabetes into usable computerized clinical decision support systems? Lessons learned from the MOSAIC project	2019	BMC Medical Informatics and Decision Making
Teliti M., Cogni G., Sacchi L., Dagliati A., Marini S., Tibollo V., De Cata P., Bellazzi R., Chiovato L.	Risk factors for the development of micro-vascular complications of type 2 diabetes in a single-centre cohort of patients	2018	Diabetes and Vascular Disease Research
Orphanou K., Dagliati A., Sacchi L., Stassopoulou A., Keravnou E., Bellazzi R.	Incorporating repeating temporal association rules in Naïve Bayes classifiers for coronary heart disease diagnosis	2018	Journal of Biomedical Informatics
Dagliati A., Tibollo V., Cogni G., Chiovato L., Bellazzi R., Sacchi L.	Careflow Mining Techniques to Explore Type 2 Diabetes Evolution	2018	Journal of Diabetes Science and Technology
Dagliati A., Marini S., Sacchi L., Cogni G., Teliti M., Tibollo V., De Cata P., Chiovato L., Bellazzi R.	Machine Learning Methods to Predict Diabetes Complications	2018	Journal of Diabetes Science and Technology
Dagliati A., Sacchi L., Tibollo V., Cogni G., Teliti M., Martinez-Millana A., Traver V., Segagni D., Posada J., Ottaviano M., Fico G., Arredondo M.T., De Cata P., Chiovato L., Bellazzi R.	A dashboard-based system for supporting diabetes care	2018	Journal of the American Medical Informatics Association
Dagliati A., Sacchi L., Zambelli A., Tibollo V., Pavesi L., Holmes J.H., Bellazzi R.	Temporal electronic phenotyping by mining careflows of breast cancer patients	2017	Journal of Biomedical Informatics

Dagliati A., Marinoni A., Cerra C., Decata P., Chiovato L., Gamba P., Bellazzi R.	Integration of Administrative, Clinical, and Environmental Data to Support the Management of Type 2 Diabetes Mellitus: From Satellites to Clinical Care	2016	Journal of Diabetes Science and Technology
Bellazzi R., Dagliati A., Sacchi L., Segagni D.	Big data technologies: New opportunities for diabetes management	2015	Journal of Diabetes Science and Technology
Sacchi L., Dagliati A., Bellazzi R.	Analyzing complex patients' temporal histories: New frontiers in temporal data mining	2015	Methods in Molecular Biology
Segagni D., Tibollo V., Dagliati A., Zambelli A., Priori S.G., Bellazzi R.	An ICT infrastructure to integrate clinical and molecular data in oncology research	2012	BMC Bioinformatics

Conference publications

Authors	Title	Year	Source title
Aidos H.; Bergamaschi R.; Cavalla P.; Chiò A.; Dagliati A.; Di Camillo B.; de Carvalho M.A.; Ferro N.; Fariselli P.; Dominguez J.M.G.; Madeira S.C.; Tavazzi E.	iDPP@CLEF 2024: The Intelligent Disease Progression Prediction Challenge	2024	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
Albi G.; Gerbasi A.; Chiesa M.; Colombo G.I.; Bellazzi R.; Dagliati A.	A Topological Data Analysis Framework for Computational Phenotyping	2023	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
Aidos H.; Bergamaschi R.; Cavalla P.; Chiò A.; Dagliati A.; Di Camillo B.; de Carvalho M.A.; Ferro N.; Fariselli P.; Dominguez J.M.G.; Madeira S.C.; Tavazzi E.	iDPP@CLEF 2023: The Intelligent Disease Progression Prediction Challenge	2023	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
Buonocore T.M.; Bosoni P.; Nicora G.; Vazifehdan M.; Bellazzi R.; Parimbelli E.; Dagliati A.	Predicting and Explaining Risk of Disease Worsening Using Temporal Features in Multiple Sclerosis	2023	CEUR Workshop Proceedings
Faggioli G.; Guazzo A.; Marchesin S.; Menotti L.; Trescato I.; Aidos H.; Bergamaschi R.; Birolo G.; Cavalla P.; Chiò A.; Dagliati A.; de Carvalho M.; Di Nunzio G.M.; Fariselli P.; García Dominguez J.M.; Gromicho M.; Longato E.; Madeira S.C.; Manera U.; Silvello G.; Tavazzi E.; Tavazzi E.; Vettoretti M.; Di Camillo B.; Ferro N.	Intelligent Disease Progression Prediction: Overview of iDPP@CLEF 2023	2023	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
Faggioli G.; Guazzo A.; Marchesin S.; Menotti L.; Trescato I.; Aidos H.; Bergamaschi R.; Birolo G.; Cavalla P.; Chiò A.; Dagliati A.; de Carvalho M.; Di Nunzio G.M.; Fariselli P.; Dominguez J.M.G.; Gromicho M.; Longato E.; Madeira S.C.; Manera U.; Silvello G.; Tavazzi E.; Tavazzi E.; Vettoretti M.; Di Camillo B.; Ferro N.	Overview of iDPP@CLEF 2023: The Intelligent Disease Progression Prediction Challenge	2023	CEUR Workshop Proceedings
Guazzo A., Trescato I., Longato E., Hazizaj E., Dosso D., Faggioli G., Di Nunzio G.M., Silvello G., Vettoretti M., Tavazzi E., Roversi C., Fariselli P., Madeira S.C., de Carvalho M., Gromicho M., Chiò A., Manera U., Dagliati A., Birolo G., Aidos H., Di Camillo B., Ferro N.	Intelligent Disease Progression Prediction: Overview of iDPP@CLEF 2022	2022	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
Guazzo A., Trescato I., Longato E., Hazizaj E., Dosso D., Faggioli G., Di Nunzio G.M., Silvello G., Vettoretti M., Tavazzi E., Roversi C., Fariselli P., Madeira S.C., de Carvalho M., Gromicho M., Chiò A., Manera U., Dagliati A., Birolo G., Aidos H., Di Camillo B., Ferro N.	Overview of iDPP@CLEF 2022: The Intelligent Disease Progression Prediction Challenge	2022	CEUR Workshop Proceedings
Buonocore T.M., Nicora G., Dagliati A., Parimbelli E.	Evaluation of XAI on ALS 6-months mortality prediction	2022	CEUR Workshop Proceedings

Strusi C., Dagliati A., Pala D., Larizza C., Bellazzi R., Quaglini S.	Taking a walk avoiding polluted routes: an application to a virtual coach for cancer	2022	MELECON 2022 - IEEE Mediterranean Electrotechnical Conference, Proceedings
Urosevic V.; Dagliati A.; Ottaviano M.; Vojicic N.; Larizza C.; Pala D.	Design and Optimization of REST Services for Performance and Scalability in Provision of Big Environmental Data to Exploratory Analytics of their Effects on Progression of ALS and MS	2022	IEEE International Conference on Consumer Electronics - Berlin, ICCE-Berlin
Amico B., Dagliati A., Plant D., Barton A., Peek N., Geifman N.	A dashboard for latent class trajectory modeling: Application in rheumatoid arthritis	2019	Studies in Health Technology and Informatics
Dagliati A., Geifman N., Peek N., Holmes J.H., Sacchi L., Sajjadi S.E., Tucker A.	Inferring temporal phenotypes with topological data analysis and pseudo time-series	2019	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
Gatta R., Vallati M., Lenkowicz J., Rojas E., Damiani A., Sacchi L., De Bari B., Dagliati A., Fernandez-Llatas C., Montesi M., Marchetti A., Castellano M., Valentini V.	Generating and comparing knowledge graphs of medical processes using pMineR	2017	Proceedings of the Knowledge Capture Conference, K-CAP 2017
Gatta R., Lenkowicz J., Vallati M., Rojas E., Damiani A., Sacchi L., De Bari B., Dagliati A., Fernandez-Llatas C., Montesi M., Marchetti A., Castellano M., Valentini V.	pMineR: An innovative R library for performing process mining in medicine	2017	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
Orphanou K., Dagliati A., Sacchi L., Stassopoulou A., Keravnou E., Bellazzi R.	Combining Naive Bayes Classifiers with Temporal Association Rules for Coronary Heart Disease Diagnosis	2016	Proceedings - 2016 IEEE International Conference on Healthcare Informatics, ICHI 2016
Dagliati A., Malovini A., Decata P., Cogni G., Teliti M., Sacchi L., Cerra C., Chiovato L., Bellazzi R.	Hierarchical Bayesian Logistic Regression to forecast metabolic control in type 2 DM patients	2016	AMIA ... Annual Symposium proceedings. AMIA Symposium
Marini S., Dagliati A., Sacchi L., Bellazzi R.	Learning T2D evolving complexity from EMR and administrative data by means of Continuous time Bayesian networks	2016	HEALTHINF 2016 - 9th International Conference on Health Informatics, Proceedings; Part of 9th International Joint Conference on Biomedical Engineering Systems and Technologies, BIOSTEC 2016
Marinoni A., Dagliati A., Bellazzi R., Gamba P.	Inferring air quality maps from remotely sensed data to exploit georeferenced clinical onsets: The Pavia 2013 case	2015	International Geoscience and Remote Sensing Symposium (IGARSS)
Sacchi L., Dagliati A., Segagni D., Leporati P., Chiovato L., Bellazzi R.	Improving risk-stratification of Diabetes complications using temporal data mining	2015	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS
Segagni D., Sacchi L., Dagliati A., Tibollo V., Leporati P., De Cata P., Cerra C., Chiovato L., Bellazzi R.	Template for preparation of papers for IEEE sponsored conferences & symposia	2015	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS
Segagni D., Sacchi L., Dagliati A., Tibollo V., Leporati P., De Cata P., Chiovato L., Bellazzi R.	Improving Clinical Decisions on T2DM Patients Integrating Clinical, Administrative and Environmental Data	2015	Studies in Health Technology and Informatics
Dagliati A., Marinoni A., Cerra C., Gamba P., Bellazzi R.	On the Correlation between Geo-Referenced Clinical Data and Remotely Sensed Air Pollution Maps	2015	Studies in Health Technology and Informatics
Fico G., Cancela J., Arredondo M.T., Dagliati A., Sacchi L., Segagni D., Millana A.M., Fernandez-	User requirements for incorporating diabetes modeling techniques in disease management tools	2015	IFMBE Proceedings

Llatas C., Traver V., Sambo F., Facchinetti A., Verdu J., Guillén A., Bellazzi R., Cobelli C.			
Dagliati A., Sacchi L., Cerra C., Leporati P., De Cata P., Chiovato L., Holmes J.H., Bellazzi R.	Temporal data mining and process mining techniques to identify cardiovascular risk-associated clinical pathways in Type 2 diabetes patients	2014	2014 IEEE-EMBS International Conference on Biomedical and Health Informatics, BHI 2014
Fernandez-Llatas C., Sacchi L., Benedi J.M., Dagliati A., Traver V., Bellazzi R.	Temporal abstractions to enrich Activity-Based Process Mining corpus with clinical time series	2014	2014 IEEE-EMBS International Conference on Biomedical and Health Informatics, BHI 2014
Dagliati A., Sacchi L., Bucalo M., Segagni D., Zarkogianni K., Millana A.M., Cancela J., Sambo F., Fico G., Barreira M.T.M., Cerra C., Nikita K., Cobelli C., Chiovato L., Arredondo M.T., Bellazzi R.	A data gathering framework to collect Type 2 diabetes patients data	2014	2014 IEEE-EMBS International Conference on Biomedical and Health Informatics, BHI 2014
Hernandez L., Onieva J., Fico G., Cancela J., Dagliati A., Bucalo M., Sacchi L., Bellazzi R., Arredondo M.T.	A proposal of architecture to share patients data out of healthcare settings for research purposes	2014	2014 IEEE-EMBS International Conference on Biomedical and Health Informatics, BHI 2014
Segagni D., Tibollo V., Dagliati A., Napolitano C., Priori S.G., Bellazzi R.	CARDIO-i2b2: Integrating arrhythmogenic disease data in i2b2	2012	Studies in Health Technology and Informatics
Segagni D., Tibollo V., Dagliati A., Perinati L., Zambelli A., Priori S., Bellazzi R.	The ONCO-I2b2 project: Integrating biobank information and clinical data to support translational research in oncology	2011	Studies in Health Technology and Informatics