

**Proceedings**

**2nd Workshop “New frontiers in  
Big Data and Artificial Intelligence”**

**BDAI 2025**

Aosta, Italy, May 29-30, 2025

## Preface

This interdisciplinary and international workshop bridges the fields of Computer Science, Statistics, and Mathematics, creating an opportunity for researchers and professionals to explore key issues related to Big Data and Artificial Intelligence. Particular attention is devoted to their principles and practice across various domains, with a special focus on the challenges and opportunities presented by fragile areas such as mountain territories.

The 2025 edition of the workshop “New Frontiers in Big Data and Artificial Intelligence” focused on how Big Data and Artificial Intelligence can provide innovative and effective tools to address the challenges of adaptation to climate change in mountain regions, mountain digital ecosystems, smart solutions for remote work in mountain areas and sustainable tourism and on these challenges.

The workshop took place on May 29-30, 2025, at the University of Valle d’Aosta, Aosta, Italy. Twenty-one original papers were submitted for peer review to this workshop. Out of these, 15 papers were accepted for this volume, eight as regular papers and seven as short papers. Overall, more than 40 researchers from Italy and abroad attended the workshop. Alongside them, over 30 students had the opportunity to engage directly in the discussions. This blend of experienced scholars and motivated young participants enriched the debate, fostering a dynamic environment of learning and collaboration.

The workshop hosted the following two keynote speeches:

- “*Regimes Identification and Data Compression: Problems and Applications*” by Prof. Roy Cerquetti (Sapienza University of Rome);
- “*From Artificial Intelligence to Multiagent Systems: Application to Smart Cities and Oncology*” by Prof. Stéphane Galland (Université de Technologie de Belfort Montbéliard).

We also had the pleasure to host an open panel discussion titled “*Sfide e potenzialità di Big Data ed Intelligenza Artificiale nelle aree montane*” on the challenges and opportunities of Big Data and AI in mountain areas. The panel discussion was chaired by Dr. Fabiola Megna and encompassed the following speakers:

- Prof. Massimiliano Ferrara (University Mediterranea of Reggio Calabria);
- Dr. Jean Marc Christille (Fondazione Clément Fillietroz ONLUS – Osservatorio Astronomico della Regione Autonoma Valle d’Aosta);
- Dr. Davide Capello (Novasis Innovazione).

We express our gratitude to all the program committee members for their dedication and expertise in evaluating all the received submissions. We would like to sincerely thank all authors, speakers, organizers, and participants, without whose contributions this stimulating event would not have been possible. We are truly grateful to all the sponsors who supported the event. We especially mention the NODES (Nord Ovest Digitale E Sostenibile) project - Spoke 3 “Industria del turismo e cultura”, the Master’s program in Management of Small and Medium Enterprises, the Associazione Italiana per l’Intelligenza Artificiale (AIxIA) and the Associazione per la Matematica Applicata alle Scienze Economiche e Sociali (A.M.A.S.E.S.) for their financial sponsorship, which supported the local organization and student participation in the workshop. A special thanks goes to Dr. Jean Marc Christille and Dr. Matteo Calabrese – Fondazione Clément Fillietroz – and to the administrative staff of the University of Valle d’Aosta, whose support was essential in organizing the event.

This volume, published by CEUR-WS, collects the 15 accepted and presented original papers.

The Workshop Chairs

Consuelo Rubina Nava, Stefano Tedeschi

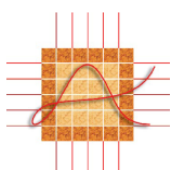
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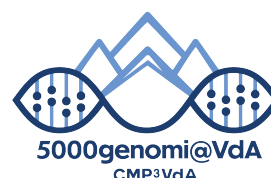


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The Microsoft CMT service was used for managing the peer-reviewing process for this conference. This service was provided for free by Microsoft and they bore all expenses, including costs for Azure cloud services as well as for software development and support.

## Organizing Committee

### Workshop Chairs

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Stefano Tedeschi, *Università della Valle d'Aosta - Université de la Vallée d'Aoste*

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