

## FOREWORD

Matching the need of new serious mathematical input to Machine Learning and Artificial Intelligence areas is clearly one of the biggest challenges in our days. The geometric approach, based on diverse extensions of Lie theory and categorical view, as well as new developments in Mathematical Physics seems to be the right pathway, and the triad of projects, CA21109 - COST Action CaLISTA, HORIZON-MSCA-SE Project 10108612 CaLIGOLA, and HORIZON-MSCA-DN Project 101119552 CaLiForNIA is aiming at this goal. The Brno and Prague groups of geometers of this newly developed network initiated by the University of Bologna took over the task to organize two training/research workshops. The first one, the Training school on Cartan Geometry, held in Brno, 4-8 September 2023, combined several expository series of lectures with original research results, and the active interactions of the participants led to this special thematic issue of Archivum Mathematicum.

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