
"FROM PEAKS TO PIXELS: A
SYSTEMATIC LITERATURE REVIEW ON
THE USE OF DIGITAL TECHNOLOGIES
FOR MOUNTAIN HERITAGE
MANAGEMENT"

A QUICK GUIDE TO
DIGITAL
MOUNTAIN
HERITAGE



OUR COLLABORATIVE RESEARCH TEAM

This project brings together **researchers** from across the **Alps**, powered by a strong passion for **mountain heritage** and funded by **UNITA** Alliance.

- **HES-SO Valais Wallis**, Institut Tourisme (Switzerland)
Mele, E. -Dunner, M. -Santangelo, N.
- **Université Savoie Mont Blanc** (France)
Colombie, G. -Duvall, M.
- **Università di Torino** (Italy)
Bonato, L. -Cornelli, M. -Trinchero, C.





More than just a view!

WHAT IS MOUNTAIN HERITAGE?

Mountain heritage isn't just majestic peaks. It's a rich tapestry of **cultural** and **natural** significance, shaped by the continuous and diverse **practices** of **communities** over time. It includes historical assets, natural landscapes and intangible cultural expressions like culinary traditions.

➤ The research problem: despite the recognized **benefits**, academic research on the application of **digital technologies** to mountain heritage remains limited.

Key Insight: digital tools are becoming vital for both preserving this legacy and **sharing** its value with the world.

THE DIGITAL TOOLKIT FOR MOUNTAIN HERITAGE

Our review identified a core set of technologies being used to document, share, and manage mountain heritage.



Mobile Apps & Web Platforms: your pocket guide to the mountains, offering **maps**, **storytelling**, and **visitor information**.



AR & VR (Augmented & Virtual Reality): **immersive tools** that bring history to life, reconstruct ancient sites or transport you to **inaccessible peaks**.



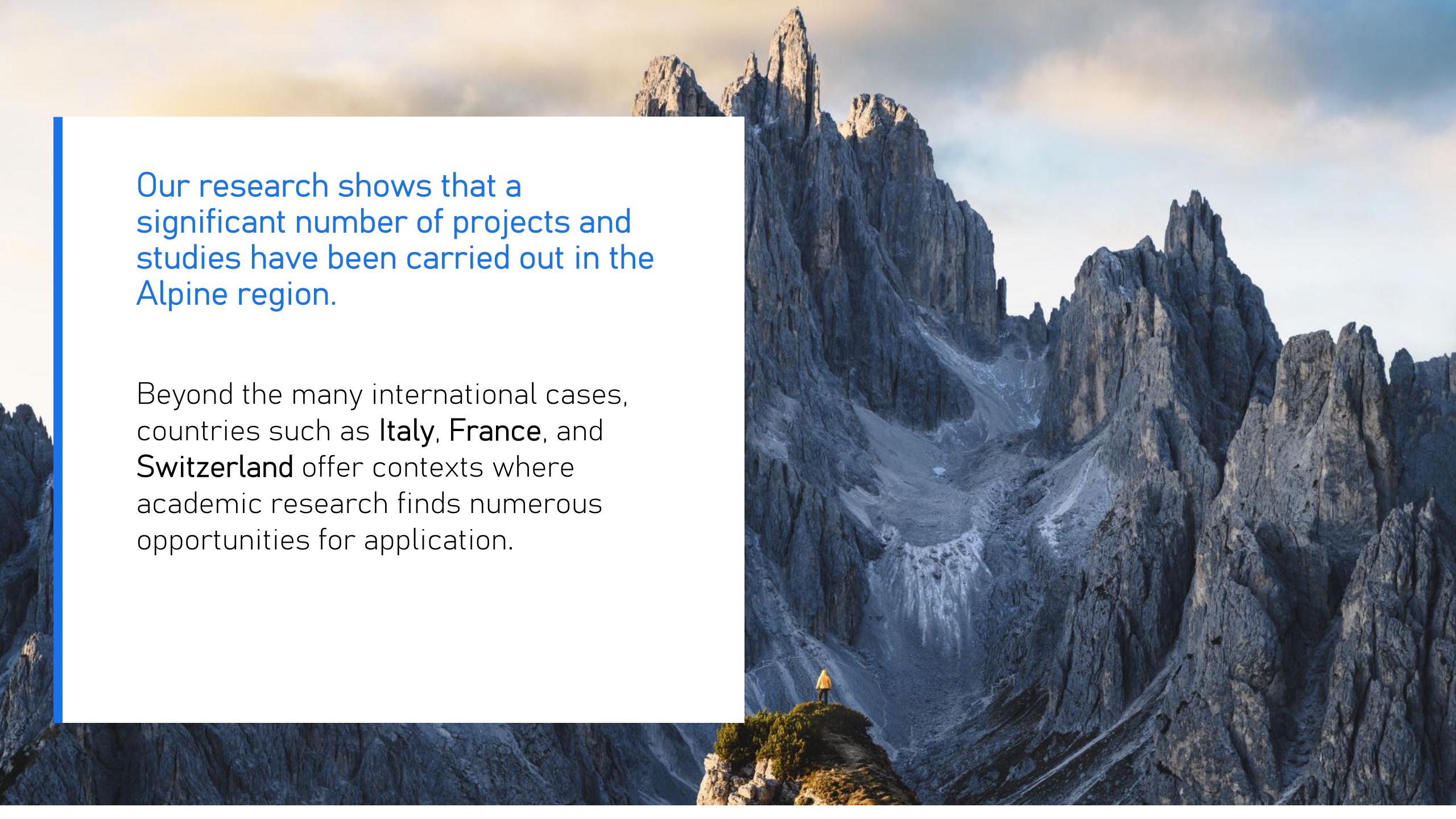
3D Modeling & Photogrammetry: creating stunningly accurate 'digital twins' of artifacts, buildings and landscapes for **research** and **conservation**.



GIS (Geographic Information System): powerful mapping technology used to **analyze environmental changes**, **manage visitor flow** and **protect sensitive areas** by handling vast amounts of multi-thematic information.

THE ALPS: AN INNOVATION HUB FOR DIGITAL HERITAGE



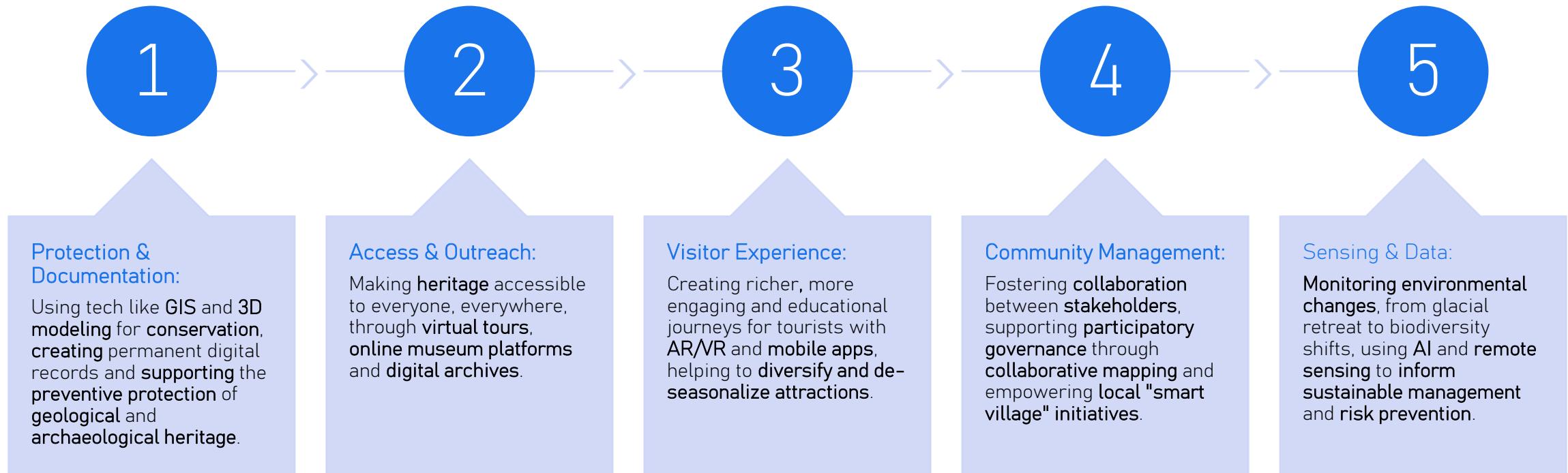


Our research shows that a significant number of projects and studies have been carried out in the Alpine region.

Beyond the many international cases, countries such as **Italy**, **France**, and **Switzerland** offer contexts where academic research finds numerous opportunities for application.

FROM PRESERVATION TO PARTICIPATION, THE FIVE KEY GOALS

We identified five key purposes driving the adoption of digital tools in mountain heritage.



THE REAL GAME-CHANGER

It's not just tech, it's teamwork!

Our most most finding? The best technology in the world is insufficient if it's disconnected from local needs.

Success depends on a collaborative ecosystem.

Digital solutions must be built with local communities, not just for them. They need to solve real issues by integrating public and private stakeholders.

This ecosystem-based approach, fostering public-private partnerships and participatory dynamics, is the key to creating digital tools that are innovative, sustainable and culturally sensitive.



TO BUILD THE STUDY “*FROM PEAKS TO PIXELS: A SYSTEMATIC LITERATURE REVIEW ON THE USE OF DIGITAL TECHNOLOGIES FOR MOUNTAIN HERITAGE MANAGEMENT*”, WE CONDUCTED A SYSTEMATIC LITERATURE REVIEW (SLR), MAPPING OUT A FIELD OF RESEARCH. OUR TWO-PHASE SEARCH STRATEGY USING GOOGLE AND GOOGLE SCHOLAR INITIALLY RETRIEVED 277 DOCUMENTS. FOLLOWING PRISMA GUIDELINES FOR SCREENING AND ELIGIBILITY, WE FOCUSED OUR ANALYSIS ON A FINAL CORPUS OF 64 KEY DOCUMENTS.

OUR METHODOLOGY: FINDING CLARITY IN 64 DOCUMENTS

RESEARCH METHODOLOGY FLOW



Retrival: 277 documents retrieved



Filtering (Screening and Eligibility): 64 documents selected



Analysis: we analyzed each document to answer our three core research questions

The type of digital tools being used
The geographical context of application
Intended objectives and the purposes behind them

Want to digitalize your territory? Let's talk!

Our team is ready to help you navigate your **digital transition**, from strategy and stakeholders engagement to marketing and implementation.

Let's work together to turn these insides into actions.

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