

AI in Sports: from Deep Learning to Generative AI



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Deltatre Innovation Lab is a cutting-edge hub for exploring and creating the future of sports, media, and entertainment. We work to push boundaries and revolutionize fan experience.



01

VIDEO QUALITY

Restoration
Super Resolution
Colorization

02

CUSTOM VIDEO INDEXING

Automated Events Recognition
Automated Data Gathering
Context and Content Analysis



03

NATURAL LANGUAGE PROCESSING

Smart Editor
Speech to Text
Speaker Diarization
Accessibility



04

SMART DATA CONSUMPTION

Fan Personas
Sports Brain
Documentation Semantic Search





Deep Learning Applied to Sport

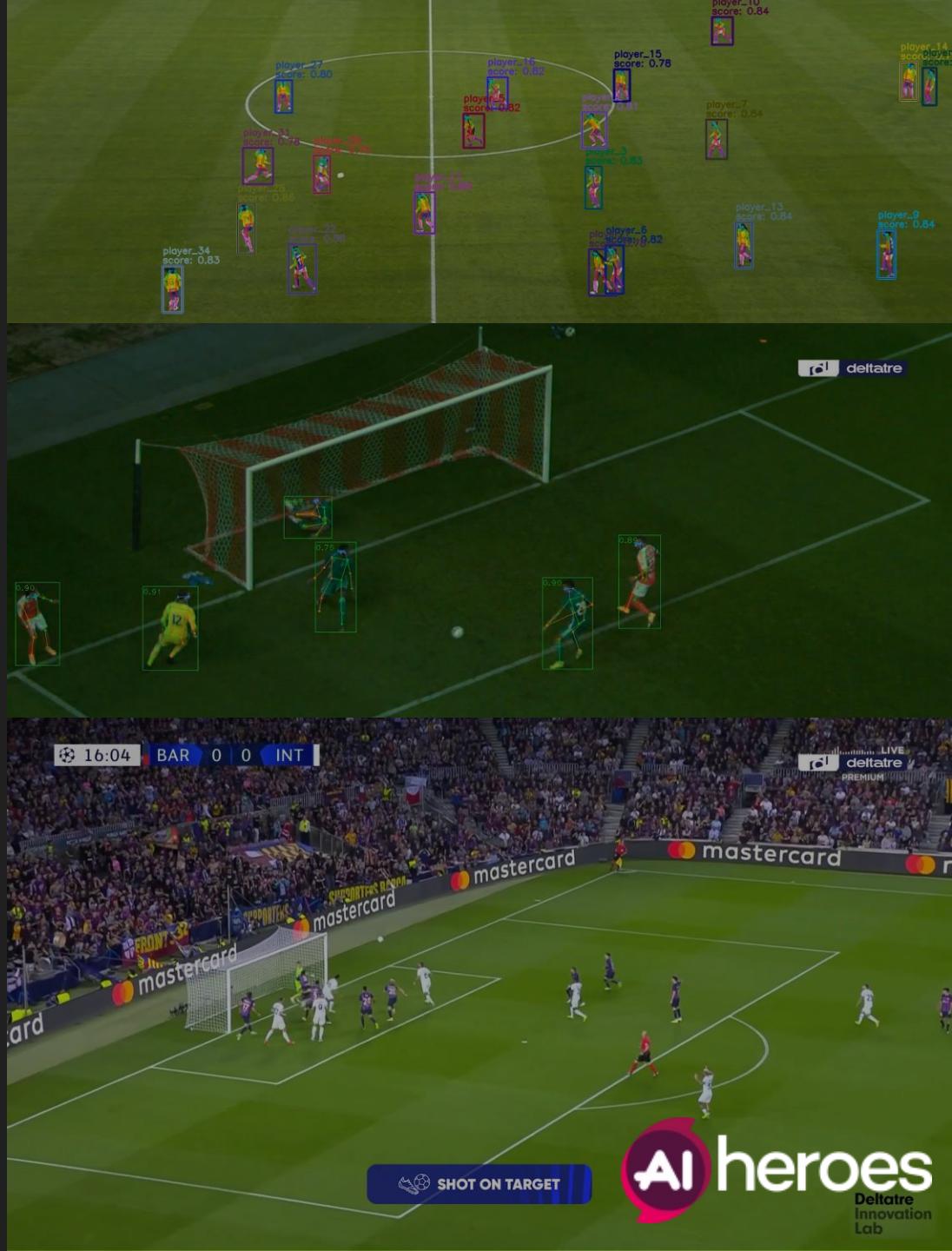
Domain Metadata

Scene Dynamics metadata delves deeper than traditional metadata, capturing the intricate nuances of a video.

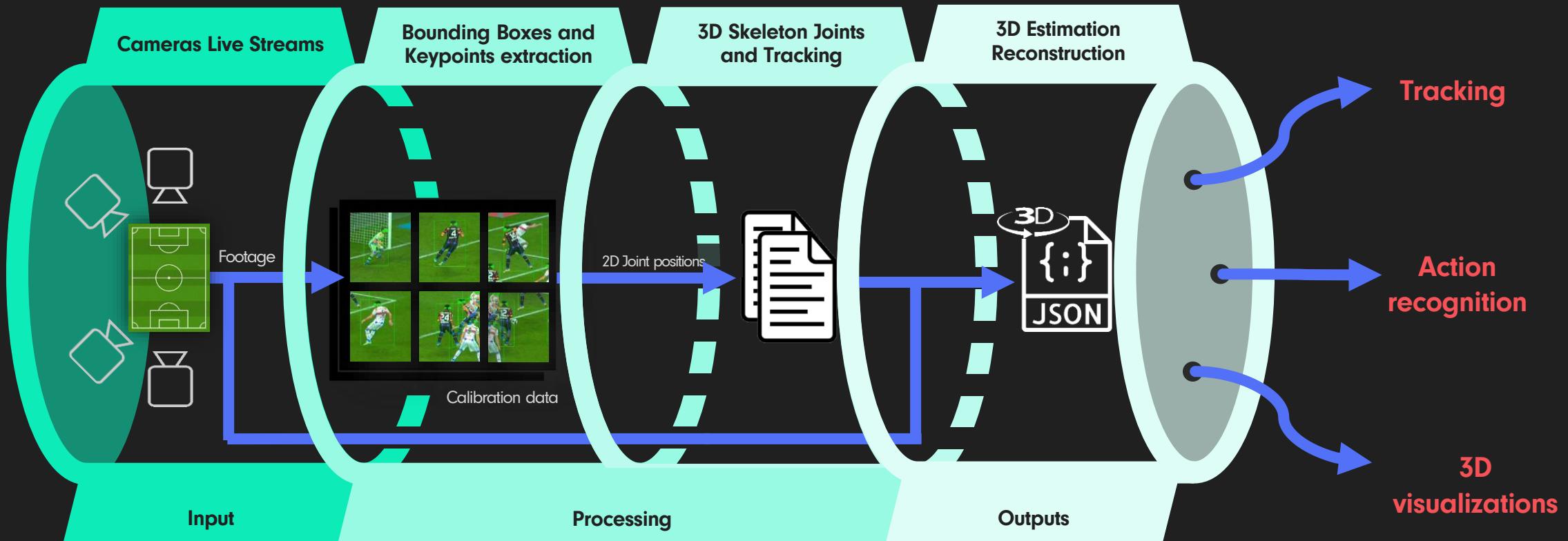
It's about understanding the **pulse** and **rhythm** of the streamed content through:

- Temporal Analysis
- Spatial Analysis
- Contextual Analysis

More than just data — Scene Dynamics offers a **rich, layered understanding** of the **analyzed content**.



Metadata Extraction

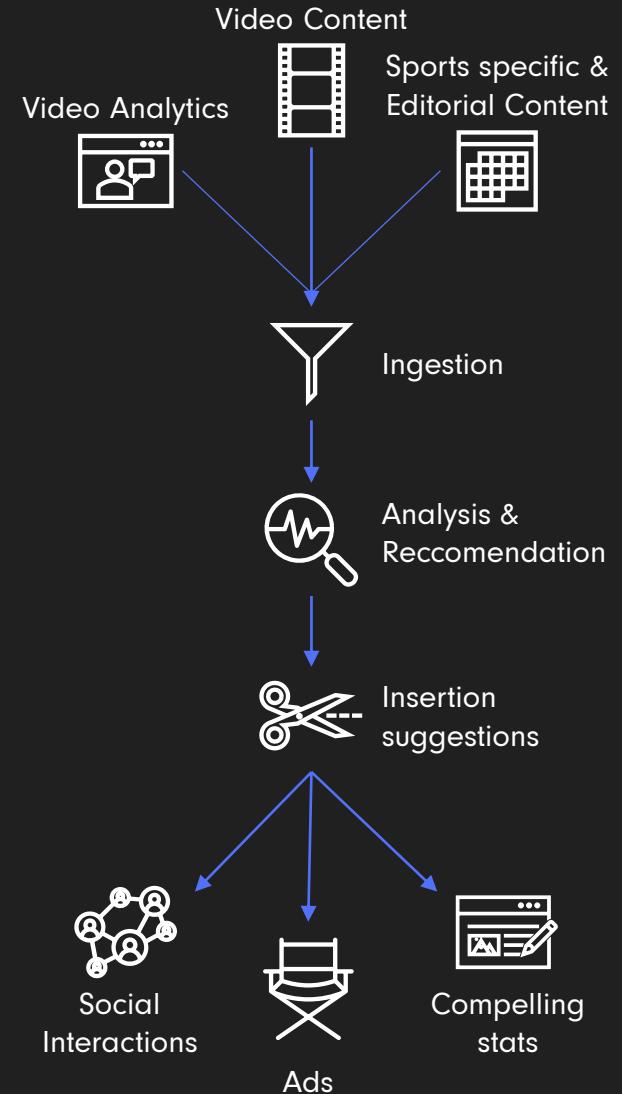


Content Metadata

Engagement and **Insertion Timeline** metadata is a nuanced blend of data science and **audience insight**, designed to optimize content deliverables and **enhance viewer interaction** during a video streaming session through:

- Concurrent Viewers
- Advertisement Insertion Points
- Interactive Segments
- Personalized Recommendations

Beyond simple metrics – Engagement and Insertion Timeline Metadata **guides** video **directors** to craft **seamless live productions**.



Insights from Metadata

Harnessing the power of metadata to **revolutionize** the sports **viewing experience**, these **insights** are tailored to capture the essence and nuances of each sport:

- Automated Offside Detection
- Virtual Replays
- Tactical Breakdowns

Beyond raw numbers — **Sport-Centric Insights** sculpt the game's essence, equipping directors for **dynamic live productions**.





Generative AI Applied to Sport

Magic?

A wizard with a long white beard and a tall blue pointed hat stands in a server room aisle. He is wearing a green robe with red lining and has his hands raised, palms open, as if casting a spell. A bright, glowing energy field surrounds his hands, with intricate white lines radiating outwards. The server racks on either side are filled with glowing blue and green lights, creating a futuristic and magical atmosphere.

“Any sufficiently
advanced technology
is indistinguishable
from magic”

Arthur C. Clarke

Everywhere, Everything

Arts & Photography

Design

Fashion

Writing

Sounds & Music

Gaming

Architecture

Marketing

Customer Support

Advertising

Programming

Scientific Research

Cinema

Sport

...

Generative AI in Sports

Generative AI stands to **redefine** the **sports industry** with innovative applications that enhance **B2B services, fan experience** and **content creation**.

The capabilities of Generative AI drive innovation across every facet of the sports sector such as:

- AI-Powered Sports Journalism
- AI-Assisted Training
- Immersive Replays
- Virtual Fan Engagement

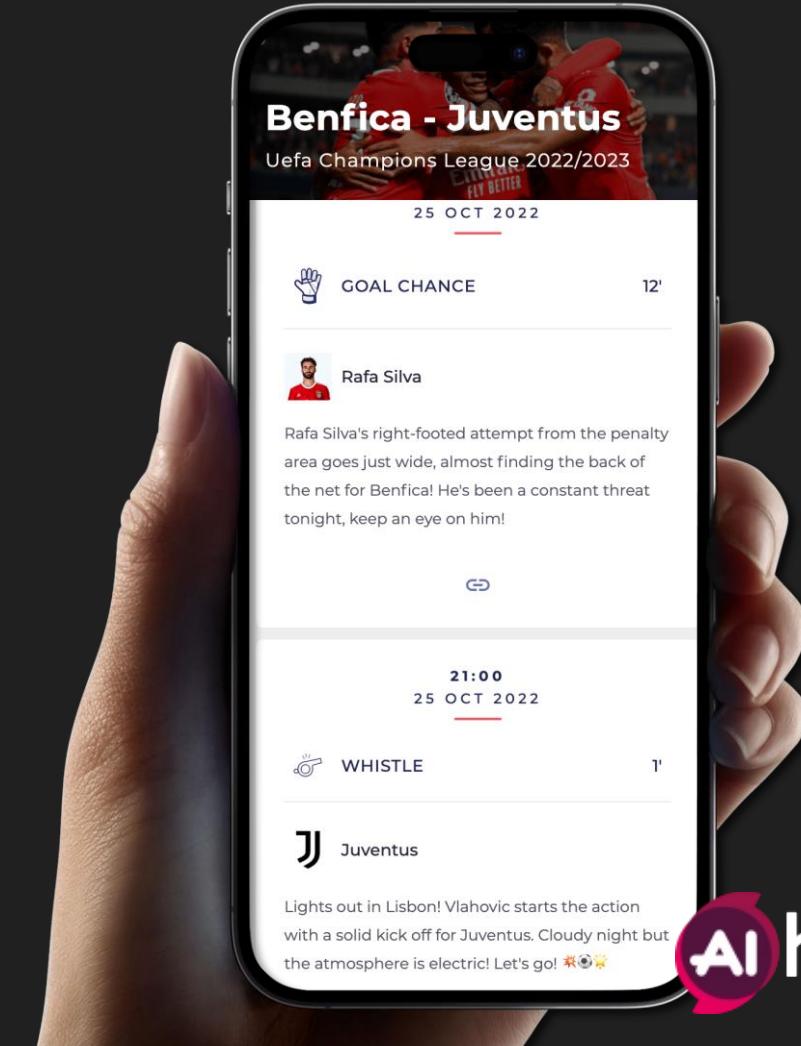


Enhancing Fan Experience

Generative AI weaves **data and insight** into every play, transforming the sports narrative.

It brings a new dimension to **storytelling** in sports, from local grounds to global stages, ensuring **every game** is an **inclusive** and **insightful** spectacle through:

- Nuanced Play-by-Play Narratives
- Scalable Content Creation
- Enhanced Accessibility
- Deep-dive Analytics

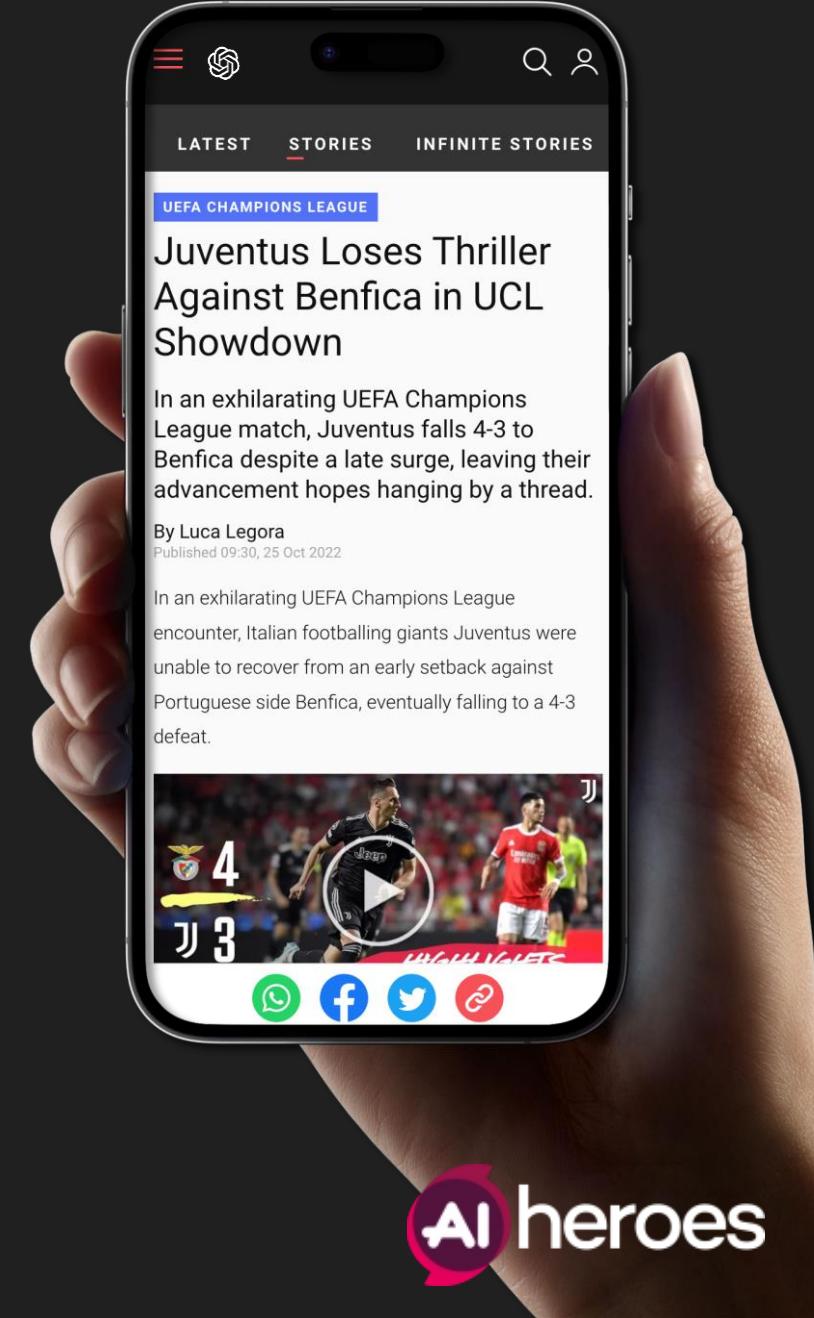


Accelerating Content Creation

In sports marketing, demos that offer **contextualized content** significantly enhance **client engagement**, facilitating more compelling conversations and fostering deeper connections.

Generative AI is revolutionizing content creation, fueling a surge of **innovative marketing** and **demos** with unmatched **rapidity** and **relevance**.

- Tailored Demonstrative Experiences
- Adaptive Brand Narratives
- Elevated Marketing Outreach



Synthetic Data

By engaging with **scenarios** born from generative AI, training becomes a crucible for innovation. Models **learn faster** and **perform better**, turning **simulated** possibilities into **real-world** excellence.

Generative AI is a powerful ally in **training** AI models, synthesizing **diverse** and **complex scenarios** that enhance predictive accuracy through:

- Enhanced Scenario Generation
- Diverse Data Enrichment
- Accelerated Learning Curves



AI-Enhanced Experiences

Generative AI **reinvents** the **past**; it doesn't just replay it, offering fans a participatory role in the sports stories they love. It's a **bridge** between **memory** and **imagination**, enriching the **fan experience** with each replay.

Generative AI transforms sport events into **immersive** entertainment shows, opening a portal to **re-experienced**, **re-envisioned**, and entirely **new** sports **moments** through:

- Customized Virtual Experiences
- Historical Event Recreation
- Immersive Live Events Consumption



AI in sports

➤ DEEP LEARNING

Domain Metadata Extraction

Content Metadata Extraction

Live Content from Metadata

➤ GENERATIVE AI

Enhancing Fan Experience

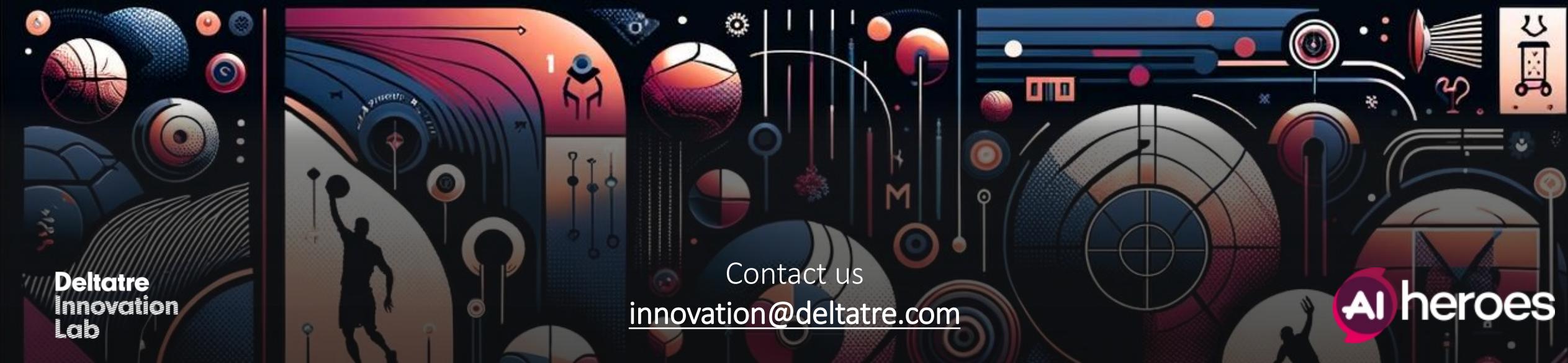
Accelerating Content Creation

Synthetic Data

AI-Enhanced Sport Experiences



THANK YOU





Microsoft
Specialist

Programming in C#
Programming in HTML5
with JavaScript & CSS3

Microsoft
CERTIFIED
Solutions Developer

Windows Store Apps Using C#
Web Applications



Deltatre
Innovation
Lab

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- AI, Machine Learning, Deep Learning on multimedia content
- Virtual/Augmented/Mixed Reality
- Immersive video streaming & 3D graphics for sport events
- Cloud solutions, web backends, serverless, video workflows
- Mobile apps dev (Windows / Android / .NET MAUI / Avalonia)
- End-to-end solutions with Microsoft Azure
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- Project Management with a focus on Innovation in Sports Technology
- Agile Methodology and Agile Project Management
- Extensive technical experience in highly-available and highly-scalable technologies
- Volleyball Coach
- LinkedIn: <https://www.linkedin.com/in/lucalegora/>



WORKSHOP

Generative AI Hands-On: from popular services to DIY solutions



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