

# Progetti di ricerca applicata basati su IA del Politecnico di Torino in ambito “Media and Entertainment”

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# Deep learning applications



Video recommendation

Monitoring indoor and outdoor environments

e.g., license plate recognition and reading, satellite image segmentation

Authentication based on biometric signals

Analysis and recognition of human body movements

e.g., detection of sports events, development of human-machine interfaces

Image denoising

# Applied techniques



## Adversarial and generative networks

monitoring systems for indoor and outdoor environments, image denoising

## Convolutional neural networks

recognition of human body movements

## Word embeddings, random walks, graph ranking

video recommender systems

# Open issues



NNs are...

- Targeted to specific tasks

- Require sufficiently large ground truth (often manually generated)

- Model characteristics are not easily interpretable

# Lesson learnt

- Collect data from multimodal sources
- Contextualize using semantic information
- Preserve semantic relationships in latent spaces
- Validate ML approaches in multiple domains



Do not trust “black box” solutions!



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