Introduction to Computer Vision for Humanities Research

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Aims

- Introduce computer vision methods for classifying images using deep learning
- Show some example uses of computer vision in Digital Humanities/GLAM (Galleries, Libraries, Archives, Museums) setting
- The process of training a model
- Thinking about labels
- Give a starting point for exploring the topic

Disclaimer

- You will not know computer vision by the end of this session
- The course uses Python but it is not necessary to follow every step of the code
- The course is a work in progress, any feedback on how useful it is (or not) would be hugely helpful
- The lesson from which this material is derived is under review and likely to change
- Some of the materials were developed in the context of Living with Machines

Computer vision

"Computer vision is an interdisciplinary scientific field that deals with how computers can gain high-level understanding from digital images or videos. From the perspective of engineering, it seeks to understand and automate tasks that the human visual system can do." – Wikipedia

Machine learning

"Machine learning (ML) is the study of computer algorithms that improve automatically through experience and by the use of data." – Wikipedia

Deep learning

"Deep learning (also known as deep structured learning) is part of a broader family of machine learning methods based on artificial neural networks with representation learning." – Wikipedia

Computer vision for humanities

Optical Character Recognition:

- Process of turning images of text into machine readable text
- Often the only feasible way for turning large amounts of digitised material into machine readable text.

Projects and papers

- The visual digital turn: Using neural networks to study historical images https://doi.org/10.1093/llc/fqy085
- Distant Viewing Lab
- Living with Machines