"Image processing for attraction audio guides in museums".

ACM: I. Computing Methodologies: I.4 IMAGE PROCESSING AND COMPUTER VISION: I.4.8 Scene Analysis: *Object recognition.*

ASM: 54-XX General topology: 54Hxx Connections of general topology with other structures, applications: 54H30 Applications of general topology to computer science (eg. digital topology, image processing)

A language to analyze, describe, and explore collections of visual art

https://link.springer.com/article/10.1186/s42492-021-00071-3

Talks about a language that can help describe pieces of art by decomposing them in smaller parts so that humans can view and understand big collections of art. Talks about using the LadeCA vocabulary to describe a piece of art and how the whole process of using it works, what is used, how it happens.

Relevant for me: The language breaks up the art piece in smaller fragments and catalogues them with a keyword, which could then be kept in a database and when trying to recognise the art in front of them, the software will bring forward the specific image and it's details.

Structure:

- ☐ Abstract
- ☐ Introduction
- ☐ Related work
- ☐ Words in LadeCA
- ☐ Semantic relations
- ☐ Results and discussion
- ☐ Complex expressions in LadeCA
- ☐ Communications with LadeCA
- ☐ Availability of data and materials
- ☐ Abbreviations
- ☐ References
- ☐ Acknowledgements
- ☐ Funding
- ☐ Author information
- ☐ Ethics declarations

- [ ] Additional information
- [ ] Supplementary Information
- [ ] Rights and permissions
- [ ] About this article

Cited: None

References: 57

Image processing

https://dl.acm.org/doi/10.5555/1074100.1074470

Talks about the literal process of taking an image in and then making it so that it is readable and useful for us.

Relevant for me: talks about how an image is processed once it is on the computer, the steps it needs before it becomes a useful image that can then be used to identify the piece of art we are looking at, so basically what we need to do in order to make it not blurry and clear and perfect so that elements from it can be read

Structure:

- [ ] Introduction
- [ ] Growth and Applications of the Technology
- [ ] Image Processing Approaches
- [ ] Image Quantization and Sampling
- [ ] Image Registration
- [ ] Image Compression
- [ ] Image Enhancement
- [ ] Image Restoration
- [ ] Image Reconstruction
- [ ] Image Segmentation
- [ ] Image Processing Hardware

Cited: None

References: 9

Recognizing Art Pieces in Subway Using Computer Vision

https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A431588&dswid=-5942

Relevant for me: it's almost the same thing I wanted to do, only it uses photos, I wanted to use a moving camera that would recognise its surroundings and when not moving, process what it sees and give back the information about the art. It also refers to using location, I was thinking of doing that as well, only it would be something that was installed in the museum specifically and would track the device's location only through the museum and therefore limit the art pieces it needed to place to only those that were in a specific room

Structure: just the ones I think are relevant for me

- ☐ 2. Related Work
- ☐ 4. Image Recognition
- ☐ 5. Location Based Services
- ☐ 6. System description: Hardware
- ☐ 7. Experimental Results

Cited: Could not find

References: 28

Color-based object recognition

https://www.sciencedirect.com/science/article/abs/pii/S0031320398000363

Talks about taking into consideration, when image processing, the point from which an image is viewed, the lighting in the room and some other factors that could change the color of the image.

Relevant for me: I don't know how relevant this actually is. Seeing as I am trying to recognize works of art which are painted in all sorts of colors, I think it should be considered. The luminosity in the museum is probably the best out there since they are on display and heavily illuminated, but the viewpoint is something to take into consideration and the shadows in the room from other people or things.

Structure:

- ☐ Introduction
- ☐ Basic color definitions
- ☐ Reflectance with white illumination
- ☐ Reflectance with colored illumination
- ☐ Summary of theoretical results
- ☐ Color-based object recognition: experiments
- ☐ Discussion
- ☐ Conclusion

Cited: 670

References: 11

Three-dimensional object recognition

https://dl.acm.org/doi/abs/10.1145/4078.4081

I've not read this whole thing, but I thought it was a nice introduction into object recognition, so I thought I'd include it. I'll look for another article, this is more for general information

Relevant for me: General information

Structure:

- ☐ Problem definition
- ☐ Mathematical Problem Formulation
- ☐ Recognition System Components
- ☐ Characteristics of an ideal system
- ☐ Literature overview
- ☐ Emerging themes

Cited: 698

References: 203

Learning Image Components for Object Recognition

https://dl.acm.org/doi/10.5555/1248547.1248575

Talks about using nonnegative matrix factorisation model in order to identify components of the big image. Not a particularly good model because it requires a lot of trial and error in order to find the parameter values required by my specific circumstance.

Relevant for me: Identifying the smaller components will make it possible for me to better tell, categorize which art piece the camera has in front of its lens since smaller components will probably make the biggest difference here.

Structure:

- ☐ Introduction
- ☐ Method
- ☐ Results
- ☐ Discussion
- ☐ Conclusions

Cited: 22

References: 41