

Face recognition on historical photographs (Anders Hast)

Proposal:

Face recognition on historical photos is challenging since rather few examples of photos of each person are available. So called one shot learning has proven to be efficient for such cases. Nevertheless, a CNN has to be trained in order to be able to create relevant features. Siamese networks have been used in the past and have proven to make good predictions. The idea is to (1) make a literature overview of face recognition methods and techniques; (2) investigate what already trained CNN network can be used for transfer learning, for the purpose of creating relevant features for historical photos; (3) try two or more deep learning pipelines (siamese etc) for one-shot (or a few examples) recognition and compare their results.

Deep learning for face recognition requires computational resources, especially GPU's so it is presumed to be necessary to use SNIC super computer resources for this type of work. It is required that the student has taken some course in Machine Learning and is interested in programming, especially in the field of deep learning. Any Image Analysis courses are an advantage, but not a requirement.