Project name	Removing sensitive information from imagery
Description	As a governmental organisation, the highest priority is protecting the privacy of citizens when using tools such as Computer Vision. The City of Amsterdam finds it important that citizens can move around unobserved and anonymously in public space. Over the last couple of years, many interesting Computer Vision ideas have been proposed to optimize the service of the municipality, for example the localization of garbage and recognition of broken assets. Nevertheless, to enable such techniques for the city, it is a must to be able to remove sensitive information from imagery, such as people and license plates. Last year, we successfully experimented with different object detection models, such as [redacted] and [redacted]. As a continuation, we would like to research possibilities of how we could improve the filter in one of the following ways: 1. With the existing object detection models, we first detect people with bounding boxes and then blur this area within the bounding box. Since it might also be possible to use the detected people for non desired purposes, it would be interesting to research if we could directly output the blurred image from a neural network (image to image translation) 2. Since we have many different datasets available within the City of Amsterdam, we might need many privacy filters due to different reasons. For example, shifts in distribution can occur for the different datasets, which would make it necessary to train different models. Interesting research would be to see if we can make a privacy filter that is invariant to the image size or make a more robust filter for changes in scenery. 3. Another interesting part of a privacy blur are the metrics. How do we know if we blurred out all the data that can be traced back to a particular person? When is a person still recognizable? How do we deal with people that are much more visible than others? We are also open to other suggestions for academic research questions around privacy blurring. --- Within the City of Amsterdam, you will work with experts from the Chief technology office, and more specifically the dedicated Computer Vision Team. CV specialists and engineers will be available for weekly brainstorming sessions and workshops.

Work environment	Within the City of Amsterdam, you will work with experts from the Chief technology office, and more specifically the dedicated Computer Vision Team. CV specialists and engineers will be available for weekly brainstorming sessions and workshops. Once a week all AI & Data Science students gather for more in-depth technical support. What we offer: • Freedom and responsibility • Working in a team of experienced people • Successful outcomes are directly implemented • A possibility to contribute to (your own?) smart city development • A monthly internship compensation What we expect: • An independent work ethic • Machine learning knowledge • Python programming skills • And most importantly: a passion for their field, an ambition to learn, and a drive to make Amsterdam even more beautiful, safe and sustainable!
Expectations	The most important thing is to be eager to explore and learn together and step out of the comfort zone. In addition to the delivery of useful predictive models, relevant results also include byproducts of the whole data analysis/processing pipeline that could be turned into insightful reports.