URStreamSight: PROJECT CHARTER

Project Name	URStreamSight
Date Produced	2020-10-04
Project Goals	This project intends to produce a software/hardware product that will monitor the quality of municipal recycling and give meaningful feedback to the individual households. Providing feedback will hopefully reduce contamination in recycling streams and increase the quality of recycling.
Project Objectives	Develop a tool that operates within waste collection vehicles that could classify recyclables and non-recyclables on a bin by bin basis. Create and install a computer and camera system within a waste collection vehicle to capture image data. Create a filter to remove low quality images from captured images by the waste collection vehicle camera. Create an API to store the images to a remote storage host. Create a machine learning model to train on the bin image dataset and classify items in images as recyclables or not. Create a system to sum the quantity of recyclable and non-recyclable material present in an image and compute a score. Create a front-end UI to take the scores and provide visual representation of quality of recycling.
Project Budget	~$1000 with items including: - AWS computing time costs - AWS machine learning development, training, testing etc. - AWS storage fees - Hardware (ie. onboard computer and cameras)
Project Sponsor	Prairie Robotics [Name of project sponsor and job title.]
Project Manager	Sam Dietrich [Name of project manager and job title.]

Additional Key Project Stakeholders

[The names of key stakeholders that are known at this point in the project, including their job title or project role.]

Software Engineering Faculty:

Dr. Macaig: Project Supervisor

Mentors:

Dr. Yow: Project Supervisor

Dr. El-Darieby: Project Supervisor

Overall Project Milestones

Described in URStreamSight: Milestone Based Schedule (see latest version)

Overall Project Risks

Limited dataset to train and test classifier

Poor model quality for classifier

Insufficient processing power of onboard computer

Stability of onboard computer and connection for collection of data.

Quality of images captured by camera.