Project progress vlog #5 requirements

Preliminary

Your capstone vlogs are all to be posted on your team's GitHub and URCourses team project wikis by the due date (timestamps will be confirmed). This team vlog will reintroduce your team and selected projects to the world and discuss your progress thus far as per the guidelines below. With respect to vlog duration, **think a minimum of 8 minutes to a maximum of 15 minutes in length**.

Due: March 18, 2021, @ 2:30 pm in your team's GitHub and URCourses team project wiki (under "Vlogs" - post a link to your video)

Team member (re)introductions

(Re)Introduce the team and (re)state roles and responsibilities (if they have changed or stayed the same)

Avery Cameron: Project Management/Flexible Developer

- Manage our GitHub structure and CI/CD
- Record meeting minutes
- Organize project meetings and milestones
- Organize meetings between URStreamSight and mentors
- Manage project documentation
- Help with Front-End and ML as needed

Raymond Knorr: Lead UI/API Developer

- Lead API and Front-End Developer
- Manage integration and documentation of our software with Prairie Robotics
- Manage Trello board for workflow organization
- Manage communications between URStreamSight & PrairieRobotics

Noah Rowbotham: Lead Machine Learning Technician

- Lead development of classification model and documentation
- Understand how to integrate with and operate within Amazon SageMaker and other products
- Work with the Aaeon boards used for operating the cameras on recycling collection vehicles

Brief project blurb

Briefly restate what your team is doing, the business needs and/or the opportunity/innovation that your team's project idea will introduce into the world

We intend to produce a software solution that will monitor the quality of municipal recycling and give meaningful feedback to the municipalities. Our project will identify contaminants when curbside recycling is collected to provide analysts with neighborhood specific data on contamination in recycling. With this information, municipalities can deliver targeted education to reduce contamination in recycling streams and increase the quality of recycling.

By educating, influencing, and reprimanding when required we can clean recycling at the source increasing revenues, lowering household expenses, and improving recycling effectiveness which in turn promotes a greener future.

Scrum dates

State the start date and end date of this scrum
March 5, 2021 to March 18, 2021

Status description

As a team, provide an overview of the project's current status (green=good, yellow=sligthly off track, red=off track). If the status is yellow or red, indicate:

- *The reason(s) that the status is yellow or red*
- *The planned action(s) that will bring the project back to a green status.*

API Status: Green

The API is complete and is now hosted on AWS with automated deployment with Serverless Framework via GitHub Actions. We also introduced a AWS Lambda function that takes results from our ML model and places them into the database from SQS. We are adding tests to the API and we are looking at doing load tests and other performance tests if there is time in the next couple weeks.

Testing Status: Yellow

We have been focusing our energy on the main aspects of our MVP, and are planning on coming back and finishing testing once everything else is functional. This will include running tests in our CI/CD pipeline and generating coverage reports.

Frontend Status: Green

Our frontend is still hosted on AWS and GitHub Actions has been working well and keeping it up to date.

Machine Learning: Yellow-Green

We have a functioning computer vision model in place that was trained on our image pipeline with the help of Prairie Robotics. We are exploring other avenues to try to improve performance. Currently, machine learning is yellow because the ec2 instance we are using from amazon to train our model is having technical difficulties. This issue has halted training

progress, but by Friday I am hoping to have it resolved and spend Saturday, Sunday, Monday training new model variations. Since training only takes approximately 1 to 2 hours, three days should be plenty of time to see some good results prior to Thursday, assuming no more technical issues arise.

Image Pipeline: Complete

Team members must also individually speak to their contributions over the stated scrum dates. What did everyone do to contribute to where the project is at? NOTE: I want to hear (and hopefully see in the video) team members in the video (this is about professionalism here folks)

Ensure to address any comments that came up in the previous scrum/meeting time

Avery:

Over this scrum I worked on fixing the API deployment issue and getting it deployed to AWS. I also updated our GitHub Actions. I also worked on Infrastructure as Code to help create resources on AWS quickly and help with future deployments for Prairie Robotics.

Ray:

This scrum, I was working on a AWS Lambda function that takes data from our ML model and puts it into our cloud database. I also investigated an issue causing our authentication to fail on the cloud API. This was fixed.

Noah:

I've spent the last scrum working on clarifying our goals for our machine learning and trying to train our contaminant detection model.

Project issues

List any issues from the Issue Log that are significant and should be shared with the audience of this report. If any related work has been done or decisions have been made, a summary should be provided.

We haven't encountered any project issues this week, we were able to fix our previous API deployment issues.

Project changes

List any project changes that were approved since the last vlog, team/instructor scrum, or project bazaar day

We haven't made any changes either.

Project demo

Demo what ya got working as-is

Next up

Discuss your team's plan for the next several weeks with respect to software design and development activities. Discuss the overall team plan but also ***(again), team members must individually speak to their contributions that are planned by the next meeting (regardless if it is a project bazaar day, vlog, or team/instructor scrum)***

Ray: I plan on working on speeding up the hosted API, and also making sure that the hosted front-end, API, and DB, all are working together.

Avery: I plan on adding more tests to the API and adding tests and test coverage to our CI/CD pipeline. I am also going to work on some additional tasks related to Infrastructure as Code to help with deployment of AWS services for Prairie Robotics

Noah: I am continuing to work on training a contaminant classifier.

Team reflection

Discuss:

- **Do you feel you are on track?**
    - Yes, we feel we are green overall, and having our API and frontend primarily done is great.
- **What progress does the team feel particularly great about?**
    - We feel great about the deployment of the API and the Lambda SQS project to take in machine learning results
- **Do you feel there are barriers to your success (if any)?**
    - Pressures of other courses are possible barriers. Our model training could delay progress but at the moment things are going smoothly.
- **Do you need any help going forward?**
    - We will continue to meet with Dr. El-Darieby and Sam for feedback.
- **Any other questions or concerns?**
    - When do you need access to our code by? Do other faculty members need access as well?
    - We helped create the data input and make design choices about the ML model, but the training was done by PR. Is it okay that we leverage that model in our project pipeline? Especially since the code used from training is not unique, it is standard cookie-cutter code from the PyTorch documentation.