



Person Re-Identification Annotator

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Project Overview

- Web app built for Tempo Analytics
- Assists a human annotator in manipulating image data sets
- Images are obtained from a deep learning algorithm which track customers while they're in the business premises
- Allows annotators to filter, move and delete images



TEMPO
ANALYTICS

Folder

Tracklet

Re-Identification Annotator

run 1

0000002025

000000007579

000000007582

000000007583

0000002029

000000007588

0000002040

000000007603

0000002048

The interface displays a grid of video frames with bounding boxes and timestamps. The first three rows are highlighted with a green box, and the fourth row is highlighted with a red box. A red arrow points from the 'Tracklet' label to the red box. The interface also includes a 'Folder' label and a 'run 1' dropdown menu.

Tracklet ID	Frame 1	Frame 2	Frame 3	Frame 4	Frame 5	Frame 6	Frame 7	Frame 8	Frame 9	Frame 10	Frame 11	Frame 12	Frame 13	Frame 14	Frame 15
000000007579	13:50:27.32	13:50:27.43	13:50:27.65	13:50:27.76	13:50:27.87	13:50:27.98	13:50:28.09	13:50:28.20	13:50:28.31	13:50:28.42	13:50:28.53	13:50:28.64	13:50:28.75	13:50:28.86	13:50:28.96
000000007582	13:50:28.79	13:50:28.90	13:50:29.01	13:50:29.12	13:50:29.26	13:50:29.37	13:50:29.48	13:50:29.59	13:50:29.71	13:50:29.82	13:50:29.93	13:50:30.04	13:50:30.15	13:50:30.26	13:50:30.37
000000007583	13:50:30.48	13:50:30.59	13:50:30.70	13:50:30.81	13:50:30.92	13:50:31.03	13:50:31.14	13:50:31.25	13:50:31.36	13:50:31.47	13:50:31.58	13:50:31.69	13:50:31.80	13:50:31.91	13:50:32.02
000000007588	13:51:40.90	13:51:41.08	13:51:41.26	13:51:41.44	13:51:41.62	13:51:41.80	13:51:41.98	13:51:42.16	13:51:42.34	13:51:42.52	13:51:42.70	13:51:42.88	13:51:43.06	13:51:43.24	13:51:43.42
000000007603	13:52:50.01	13:52:50.12	13:52:50.23	13:52:50.34	13:52:50.45	13:52:50.56	13:52:50.67	13:52:50.78	13:52:50.89	13:52:51.00	13:52:51.11	13:52:51.22	13:52:51.33	13:52:51.44	13:52:51.55
0000002048	13:52:51.66	13:52:51.77	13:52:51.88	13:52:51.99	13:52:52.10	13:52:52.21	13:52:52.32	13:52:52.43	13:52:52.54	13:52:52.65	13:52:52.76	13:52:52.87	13:52:52.98	13:52:53.09	13:52:53.20

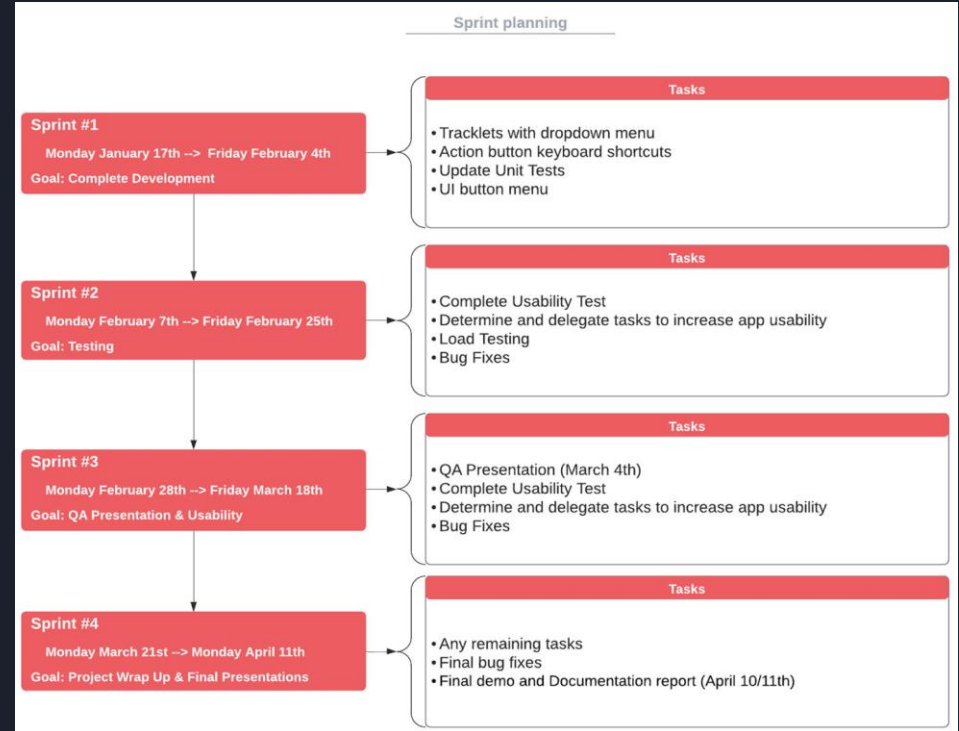
Technologies Used

- Angular Frontend
- Python Backend with Flask
- Runs on Ubuntu 20.04 Machine
 - Requested by Client
 - Also runs on Windows and Mac
- PyTest for Unit Testing
- GitHub actions to automate builds
- Runs on Chrome and Firefox



Project Planning

- Implemented a sprint plan
- Met with client weekly to obtain feedback, ask questions, and set out weekly tasks
- Utilized github issues for bug tracking and assigning tasks
- Met all milestones
- Application fully meet client's expectations



Quality Assurance

- Unit Testing
 - Tests run as code is committed to the repo with Continuous Integration
- Load Testing
 - To determine impact on performance from image load
- Usability Test
 - Test 1 Score: 17.2 / 28
 - Test 2 Score: 24.6 / 28

Person Re-Identification Annotator (PRA) Usability Test 2 Summary

Usability Guideline	Usability Obstructions	Average Score
Visibility of system status	<ul style="list-style-type: none">- Does not show errors thrown by Python in the terminal- Endless spinner after time filter applied and when no results found- Loading status could be improved, currently new items pop up after a few second of background loading	$(2 + 3 + 3 + 2 + 4) / 5 = 2.8$
Match between system and the real world		$(4 + 4 + 4 + 4 + 4) / 5 = 4$
User Control and Freedom		$(4 + 4 + 4 + 4 + 4) / 5 = 4$
Consistency and standards		$(4 + 4 + 4 + 4 + 4) / 5 = 4$
Flexibility and efficiency of use	<ul style="list-style-type: none">- Would prefer an optional scrollbar to scroll rows with lots of images	$(4 + 4 + 4 + 3 + 4) / 5 = 3.8$
Aesthetic and minimalist design		$(4 + 4 + 4 + 4 + 4) / 5 = 4$
Help users recognize, diagnose, and recover from errors	<ul style="list-style-type: none">- Time filtering not working properly, doesn't seem to load proper images- Pagination would solve performance issues- Error received after merging tracklets	$(0 + 2 + 2 + 4 + 2) / 5 = 2$
Total Average Usability Score:		24.6 / 28



Lessons Learned

- Scope creep
- Embrace agile workflow
- Consistent requirement gathering
- Setting clear expectations
- Writing testable code as project scales



Thank You

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