Beta Presentation
Automated Retrieval of ADAS Driving Environments
The Capstone Experience
Team Bosch

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Project Overview

• The Problem:
  ▪ Manually searching video for specific environments
  ▪ Thousands of hours of footage

• The Solution:
  ▪ Automatically tag & categorize footage based on features/environments
System Architecture

Frontend

Backend

Data

User
Process Video Step 1

ADAS Tagging Tool

1. Select Folders
   - Use the folder icon below to browse for files. Copy the full file paths of folders you’d like to process, and paste them in the text box below. Clicking ‘Add Folder To List’ will add it to the list of folders to be processed.

   **Browse Folders**

   **Full Path**

   **Selected Folders List**

   C:\Users\strie\Documents\20-21\Fall20\CSE498\team-bosch\ML\video\beta

2. Include/Exclude Rules

NEXT
Process Video Step 2

Select Folders

Include/Exclude Rules

Specify specific strings to be included or excluded from the filenames found in the folders listed in step 1. Separate rules by semi-colons. For example, filter for all files from October and November 2020 by specifying include rule '2020-10;2020-11'. If you do not wish to filter using include/exclude rules, simply click the 'Fetch Files' button.

Include Rules

Exclude Rules

Review Selected Files

FETCH FILES
Process Video Step 3
Process Video Step 4

Review Results

Done! Click the files below to view the associated tags.

C:\Users\strie\Documents\20-21\Fall20\CSE498\team-bosch\ML\video\beta\RU-0634_Gen5_2020-02-25_20-42-57-0003.avi

C:\Users\strie\Documents\20-21\Fall20\CSE498\team-bosch\ML\video\beta\RU-0643_Gen5_2020-01-15_06-48-52-0004.mp4

C:\Users\strie\Documents\20-21\Fall20\CSE498\team-bosch\ML\video\beta\RU-0643_Gen5_2020-02-06_19-20-48-0003.avi

Pending Review

7 tags fall below a .75 confidence threshold. Click the button below to configure manual review (NOTE: this may refresh the page.) Then, navigate to the Manual Review page and follow the instructions to validate these tags.

CONFIGURE MANUAL REVIEW
Manual Review 1
Manual Review 2

Does the tag 'bicycle' appear in this image? (confidence = 0.6188)

YES  NO
Search For Tags 1
Search For Tags 2
Search For Tags 3

ADAS Tagging Tool

Select Filters

Select Tags

Review Selections

Date Range: 11/15/2020 to 11/15/2020

Video File Sources:
Batch Ids:
Logic Rules: (Rain & Snow)

SEARCH FOR TAGS

Results
Search For Tags 4

ADAS Tagging Tool

- Select Filters
- Select Tags
- Review Selections
- Results

C:\video/Phx123.avi
C:\video/NYC456.avi
C:\video/Atl523.avi
What’s left to do?

• Train New Objects
• UI Improvements
• Manual Review Instructions Page
• Train New Tags Instructions Page
• Testing and Bug Fixes
Questions?