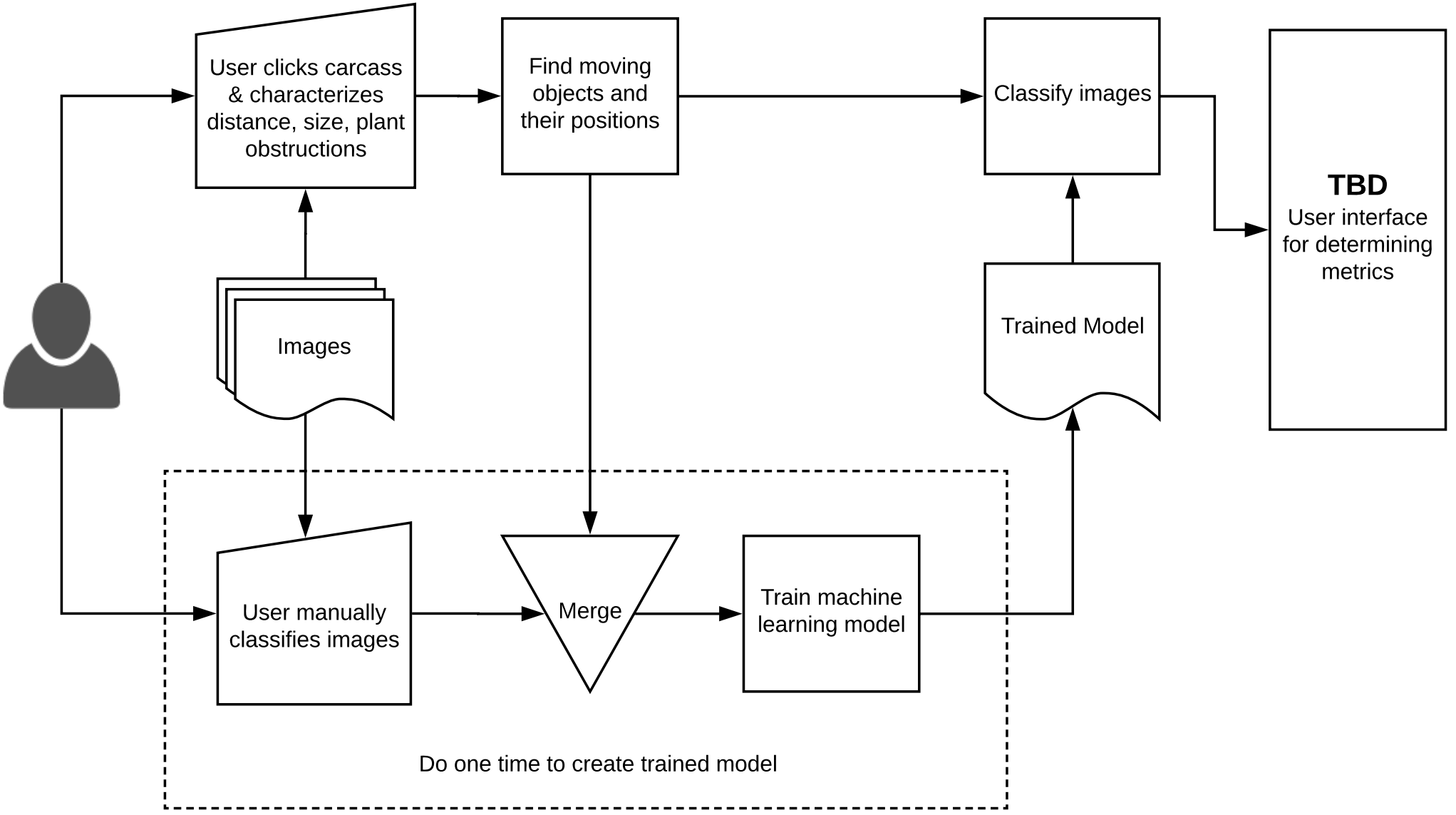
Hawk Watch International
Roadside Image Classification
Process Diagram

26 June 2018

Prepared by Becky Christman



Hawk Watch International
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Image Processing

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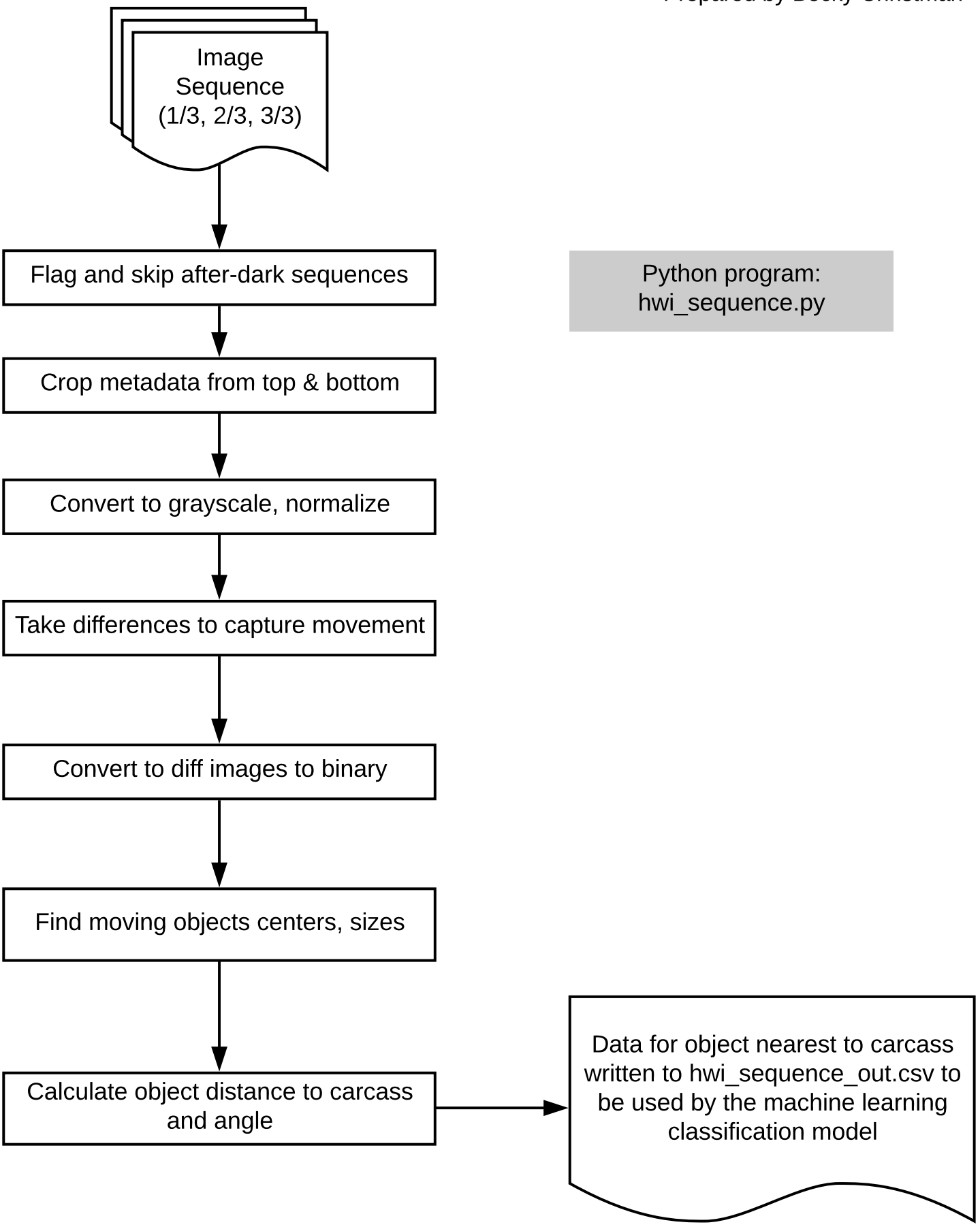

Hawk Watch International
Roadside Image Classification
Machine Learning Model

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Feature selection will change. This list is not final.
Features are used to train the machine learning model.

Feature Descriptions:

Mean - Mean intensity of the difference image

Std - Standard deviation of the difference image

Carcass Dist - User entered categorical with 1=close, 2=medium, 3=far

Carcass Size - User entered categorical with 1=small like rabbit, 2=medium like coyote, 3=large like deer or elk

Obscuring Plants - User entered categorical with 1=none, 2=some plants, 3=substantial plant obstruction of carcass

NumObj - Number of moving objects in the sequence of images

Size - Size in pixels of moving object closest to the carcass

Dist - Distance in pixels of moving object closest to the carcass

Angle - Angle in degrees between the moving object center and the carcass

Machine Learning Model

These details will change as more training data is added and the model is tuned.

Model type: Random Forest Classifier

Training dataset size: 7458 rows

Run time to generate feature set (hwi_sequence.out): substantial, ~30 minutes for 1000 images on my laptop

Run time for trained model: fast

Output format: CSV spreadsheet with 1's and 0's for classification

Accuracy: 91 - 95%