



WHAT R THOSE

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Cream Phil'd Donut

Points to hit:

Presentation strengths: 1 (worst) - 5 (best)

Is the weekly progress clearly stated? 1- 5

Did the live demo work successfully? 1- 5

Our scores last time:

Overall	Weekly progress stated?	Did demo work?
4.52	3.92	4.2

118/120

I think we did a great job overall, but could be clearer about stating weekly progress in the very beginning as we scored lowest on that. I think people scored other groups within the first few seconds so even though we had weekly progress indicated, it was in the very last slide, so people already made their decision at that point.

Our strengths were that it was entertaining, people liked user personas, presenters seem excited

Agenda

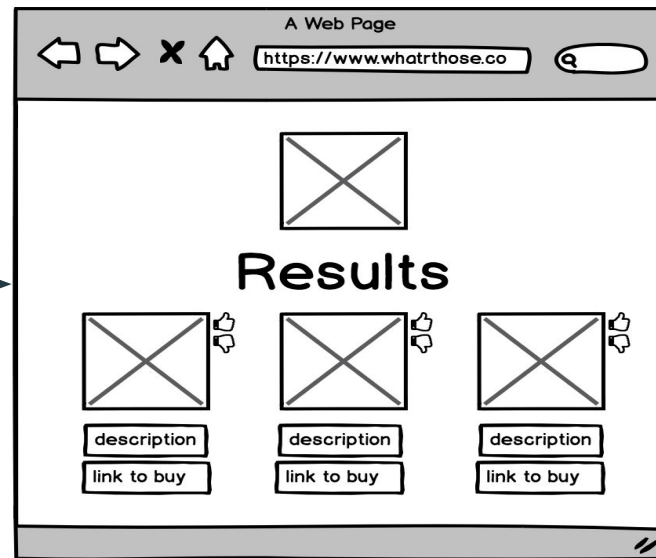
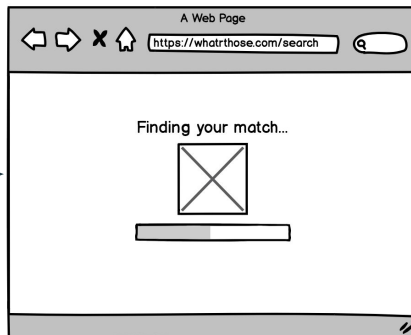
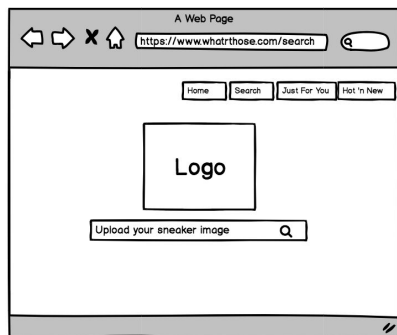
-  Project Recap
-  Functionality Pipeline
-  Weekly Progress
-  Live Demo



What is “What R Those?”

Sneaker detection and classification

Tell users what brand and model a sneaker is from an image



How does it Work?



1. User loads an image to the website.
2. Image is uploaded to an S3 bucket.
3. Flask calls AWS Lambda function to pull image from S3.
 - a. Create Bounding Box (Faster RCNN) →
Model Classifier (ResNet34 CNN) → Results (class label, probability)
4. Serve results to frontend.

Weekly Progress



Front/Backend Development

- Established initial website
- Upload functionality



Engineering

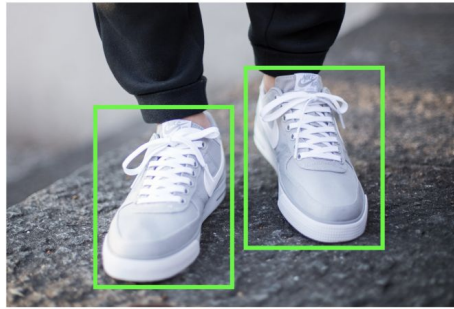
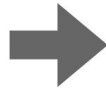
- Refined deployment and setup



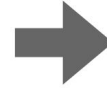
Data Science



Modeling Approach



Bounding Box Model



Arg Max
 $p(\text{shoe})$

Classification Model

Data Acquisition



Selenium to scrape images from google:

- 4 Nike Models
- 300 images per model



Air Force 1



Air Jordan 1



Air Max 1



Air Max 90

Data Acquisition



Label Img Package to label images:

- xmin, xmax, ymin, ymax data for each bounding box in XML format



Bounding Box Model Progress



Trained on 400 images



Mean Average Precision: 0.97



Classification Model Progress



Initial Prototype model trained on images acquired through Selenium



Used first round of epochs to determine which pictures were confused by the model the most

- Deleted Photos that were:
 - Blurry, contained multiple shoe models, more than 2 shoes, etc.



Trained more epochs afterwards on clean training set






~93% classification accuracy






Next Steps..



Frontend / Backend:

-  Connect backend with deep learning models (via AWS Lambda).
-  Create results page.
-  Store user results into database for each user.

Data Science:

-  Complete detection model, crop images, and feed them to classification model.
-  Retrain classification model on cropped images and tune for increased accuracy (>95%).
-  Based on stability of first brand of shoes, expand classification to another brand



Live Demo