What Makes a Good Photo?

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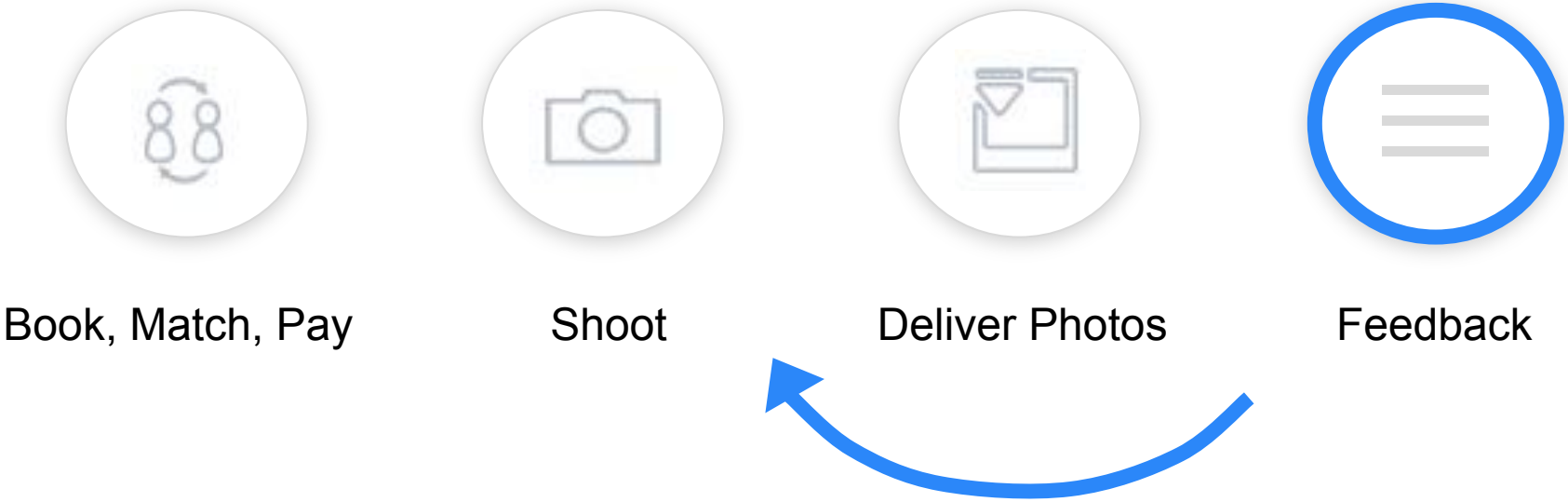
IMPROVE PHOTOGRAPHER BOOKING PLATFORM



GOAL

Increase client satisfaction

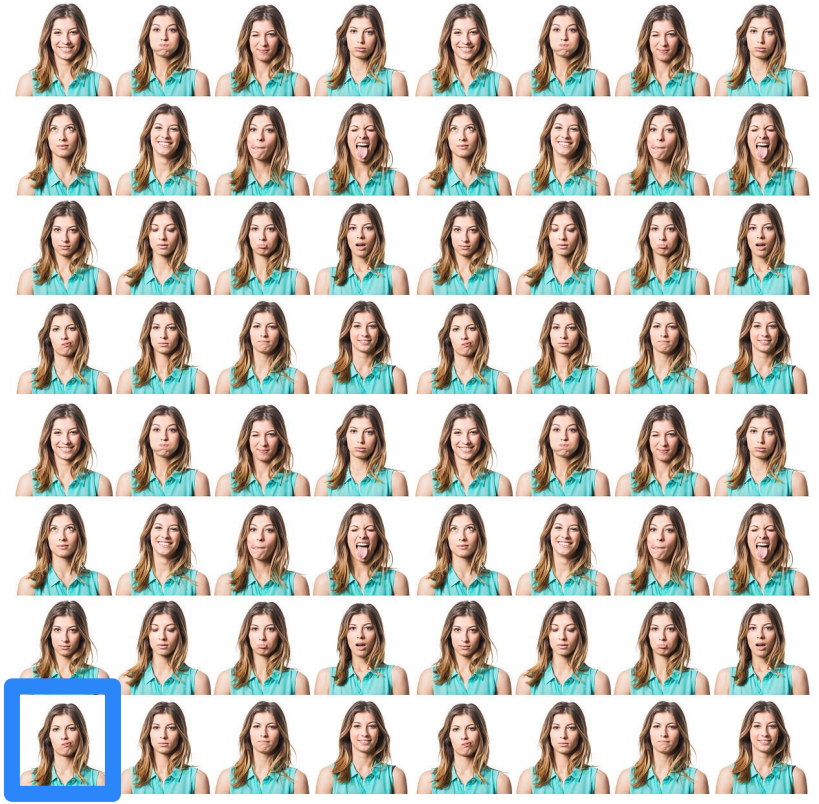
APPROACH

Give feedback to photographers before they deliver photos to clients

Photographer Pain Points

Must give photos to client within 48 hrs of shoot

May have 100s of images to review, enhance



Solution

Use machine learning to help photographer quickly detect photo quality issues

SUCCESS CRITERIA

Effectively judge photos

- Understand what impacts quality, build models to measure attributes

Composition (e.g. rule of thirds)

Provide actionable insights

- Photographer can edit bad photos or delete them

Color saturation

PHOTO QUALITY: Industry Landscape

Evaluating photo **content** *systems exist*

quality *new area*

EyeEm

PHOTO QUALITY: Industry Use Cases

Evaluating photo **quality**

Google

Returning best results in image searches

yelp

Displaying most attractive photos for businesses first

PHOTO QUALITY: Available Resources

Training Data

Aesthetics and Attributes Database (AADB) provides photos with aesthetic quality labels

Overall Quality Rating

Quality Ratings

- Balancing Element
- Color Harmony
- Interesting Content
- Shallow Depth of Field
- Good Lighting
- Object Emphasis
- Rule of Thirds
- Vivid Color

PHOTO QUALITY: Model Development

Training Data

AADB photos, quality labels

Model

MobileNet convolutional neural network

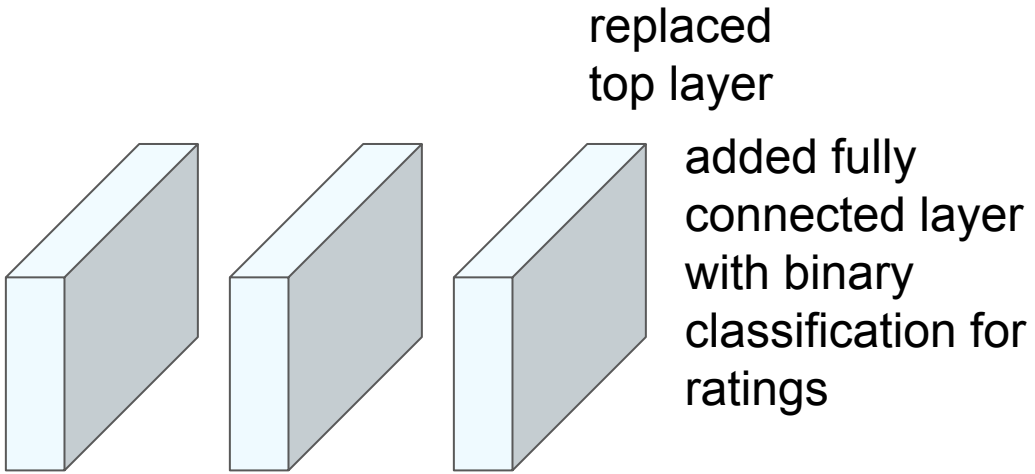
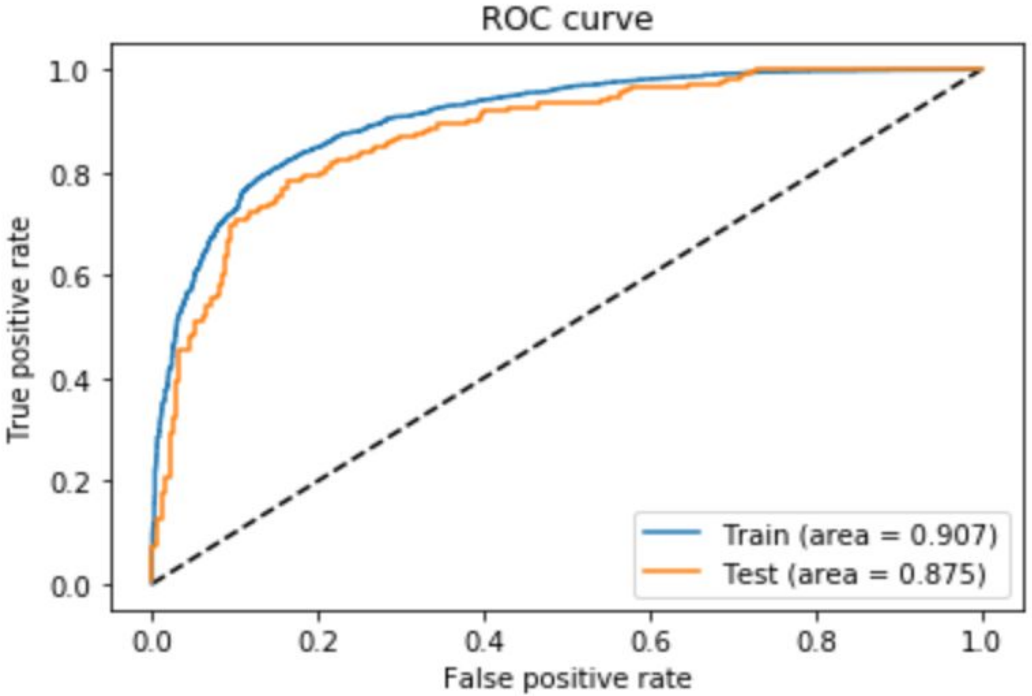


PHOTO QUALITY: Model Development



Results

Model was able to predict quality labels associated with AADB images

PHOTO QUALITY: Model Deployment - Web App

PhotoGrader

photograder.wangruoying.com

Photo Grader

Upload an album

Photos with highest quality scores

Overall: ★ ★ ★ ★ ★

Color balance: ★ ★ ★ ★ ★

Colorfulness: ★ ★ ★ ★ ★

Photos with lowest quality scores

Overall: ★ ★ ★ ★ ★

Color balance: ★ ★ ★ ★ ★

Colorfulness: ★ ★ ★ ★ ★

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FURTHER ANALYSIS

Review data to determine which factors are most important to client satisfaction

FEATURE IMPORTANCE: Platform Data Available

Book, Match, Pay

Shoot

Deliver Photos

Feedback

Customer sets:

- Shoot type, location, time
- Preferences

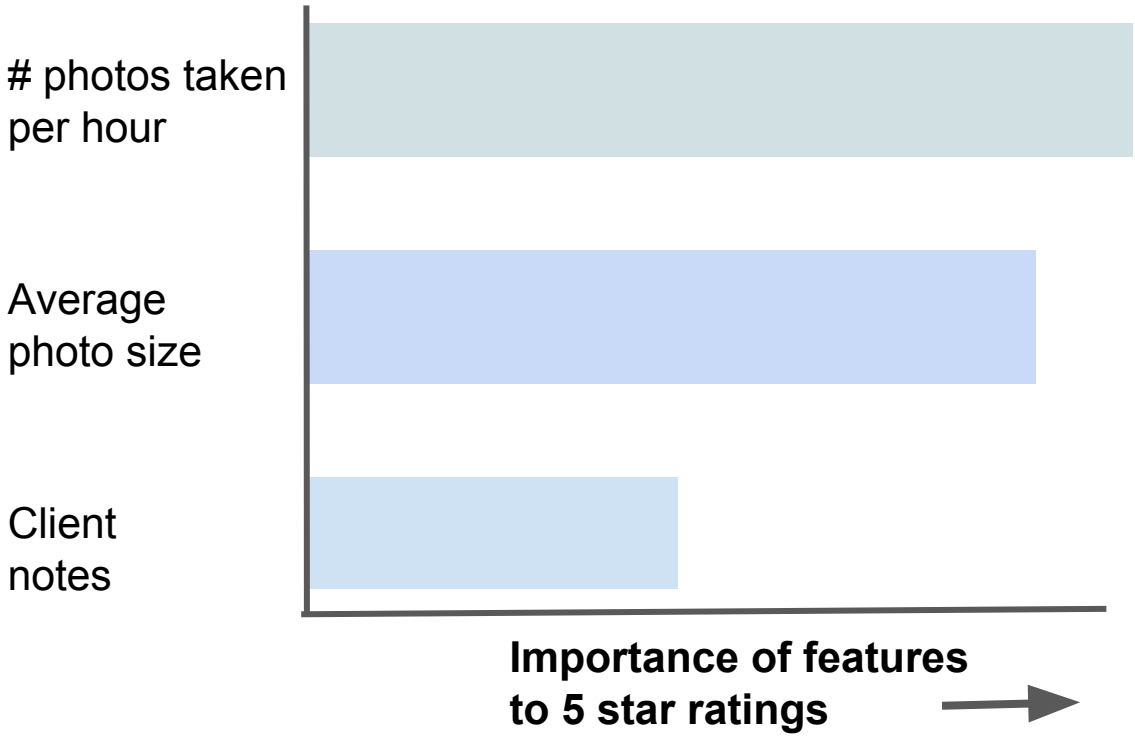
System detects:

- Photo exif, size

Customer can:

- Rate album
- Favorite photos

FEATURE IMPORTANCE: Factors Impacting Ratings



Recommendations

Set guidelines for photographers
(# photos, photo size)

Encourage clients to give preferences before shoots

Michelle Schaffer

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CS, Business Background

MBA — NYU Stern

BS — Cornell University