

embedded **VISION** SUMMIT 2018

Building a Practical Face Recognition System Using Cloud APIs




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- Intro
- Benefits to Cloud
- AI Cloud Offerings
- My solution
- Cases
- Successes
- Future
- Conclusion



The Problem - Identifying Subjects

- Bulletins sent to multiple agencies.
- PDF containing images viewed by officers
- If they recognize the person in the images, they reply to emails
- Schedule lag, memory, and attrition make identifying subjects difficult






TIGARD POLICE DEPARTMENT

ATTEMPT TO ID

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(U/FOUO)

The above subject entered Lowes alone, selected \$953 in Dewalt tools, scanned them in at the self-checkout, then left without paying. He left as the passenger in the above vehicle. If you recognize this person, please contact Officer Tillotson.

Why the Cloud

	On Premises	The Cloud
Ease Of Implementation		✓
Customization		✓
Compliance with Regulations	✓	
Exit Strategy		✓
Cost		✓



- Google Cloud Platform
 - Vision API
- AWS
 - Rekognition
- Microsoft Azure
 - Computer Vision API
- Clarifai
 - Face Detection



Microsoft Azure




Creating a solution




- Determine what images should be included
- Index the images
- Create Front end for searches
 - Web
 - Mobile



Solution – Front End




Choose Photo
Check Face




Booking Number:	
Name:	
DOB:	
Race:	W

Match 93.43%


< 2/5 >




Submit



115lbs	5'03"
W	BRO
	79.45%

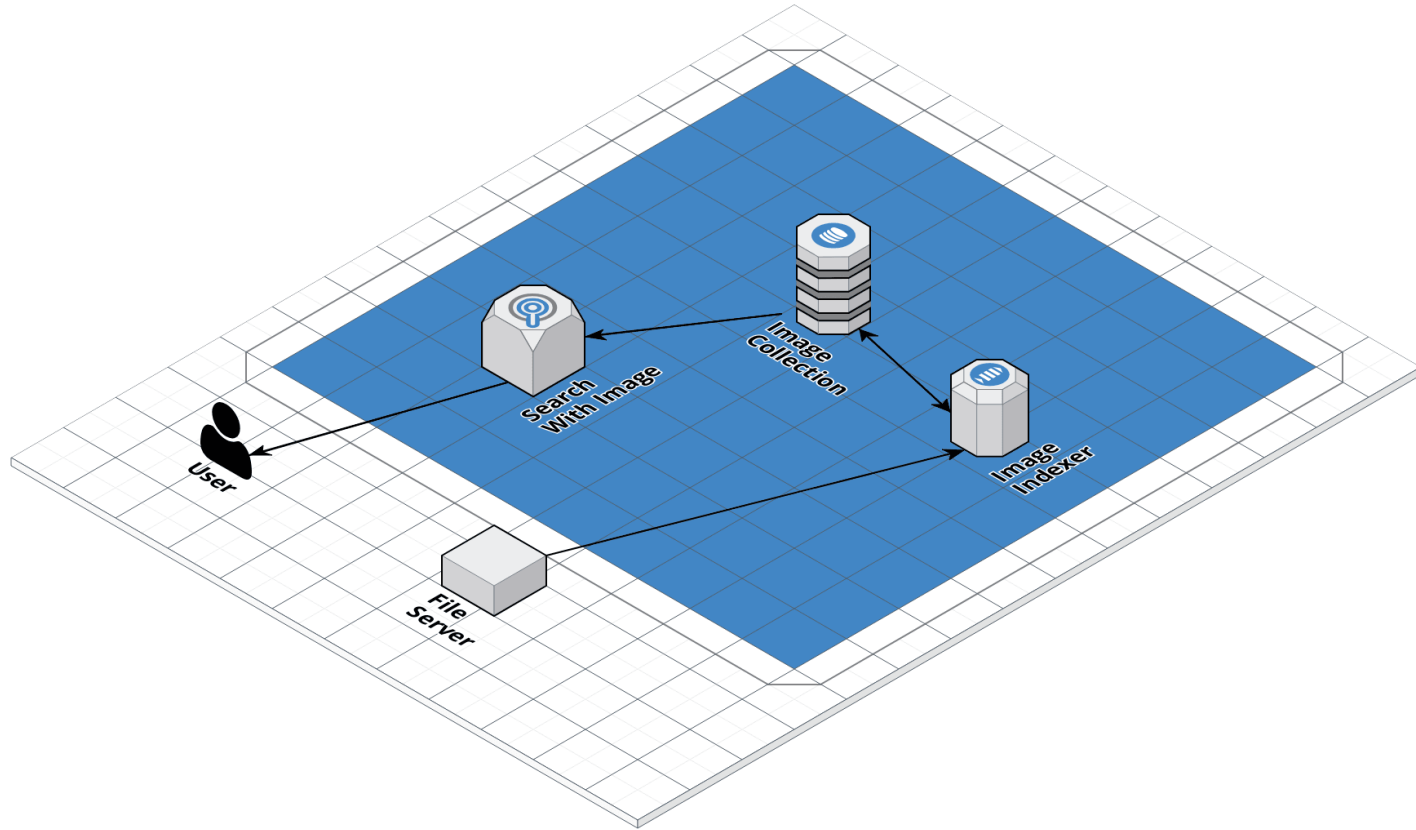


125lbs	5'08"
W	BRO
	72.18%



140lbs	5'04"
	BRO

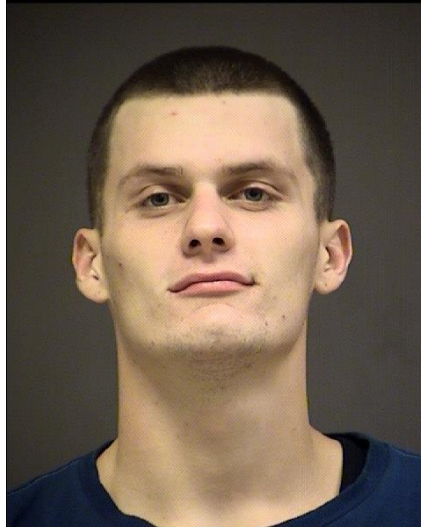
Solution



Case Studies



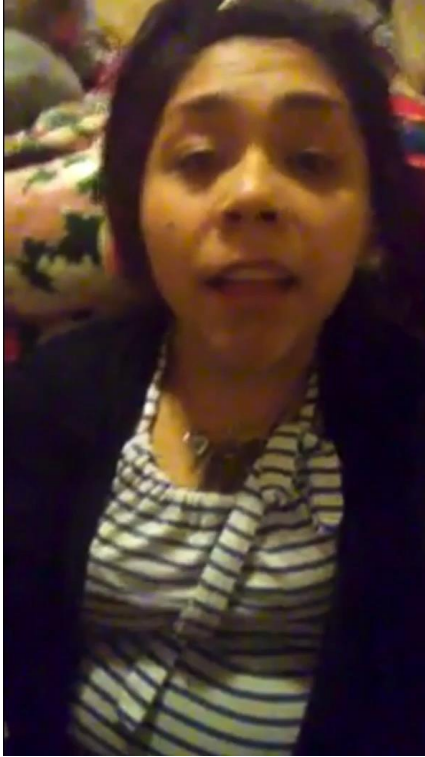
Example Cases – Hardware Hoodie



Example Cases – Car Thief



Example Cases – Facebook ID (Theft)



- Time to ID suspects has significantly decreased
- Cloud services is now an option for creating tools for the office
- Command Staff and Deputies excited about new tech
- Future:
 - Use solution to identify at-risk individuals
 - Integrate with other agencies to share collections



- [Using Amazon Rekognition to Identify Persons of Interest for Law Enforcement](#)
- [Azure Computer Vision API](#)
- [Google Cloud Vision](#)
- [Clarifai Face Detection](#)
- [AWS Rekognition](#)



Thank you
Questions

