

An aerial photograph of a village completely inundated with floodwater. The water is a murky, brownish-yellow color. Numerous small houses with various roof colors (red, blue, grey) are partially submerged. Several large, green trees stand isolated in the water. A long, narrow path of people is visible, wading through the water between clusters of houses. The overall scene depicts a severe natural disaster.

Vision

**Faster Disaster Relief via
Computer Vision and Machine Learning**

Before Disaster Strikes

- Types of essential goods, shops for distribution, and affected populations are determined
- Individuals from affected population procure survival essentials
 - Money
 - Vouchers
 - Product
- Shops owner reports voucher amount to Red Cross
- Shop owner is reimbursed if vouchers are used and authenticity is verified.

Scale and Security Hamper Current Efforts

- Distributing Product
 - Distribution is difficult (remote location, security liability), unscalable, and expensive
- Voucher System for Disaster Relief
 - Convincing shopkeepers and population of voucher validity
 - Scaling manual distribution
 - Counterfeited Vouchers
 - Voucher theft
- Direct Financial Assistance
 - Theft, Misuse, and Security Concerns
 - Scaling manual distribution

Vision Disaster Relief: Get App, Take Photo

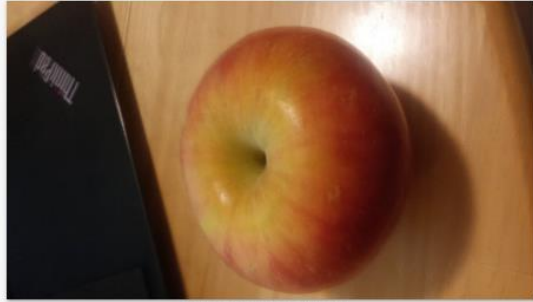


Download App



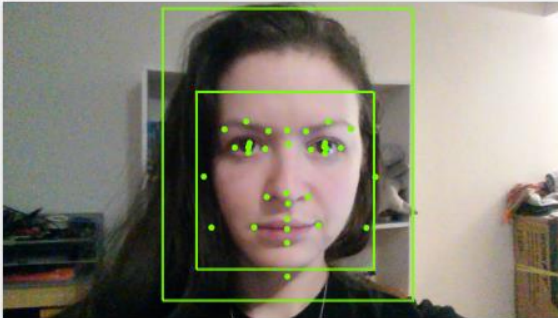
Photo: Person + Purchase

Product + Facial Recognition



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Apple	89%
Fruit	87%
Produce	85%



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Account Balance \$10.20

Water

Apple

Flour

Toilet Paper

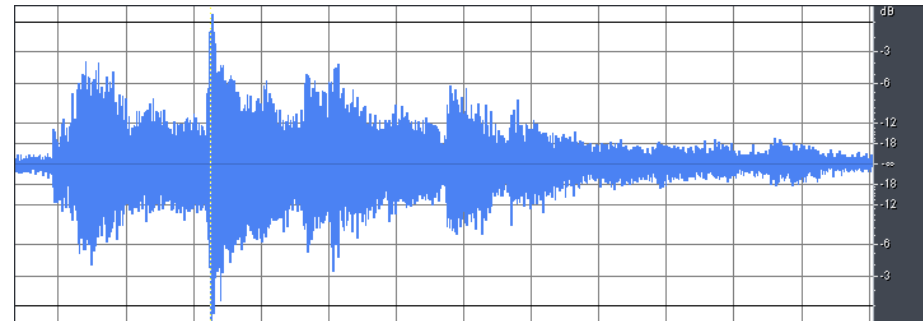
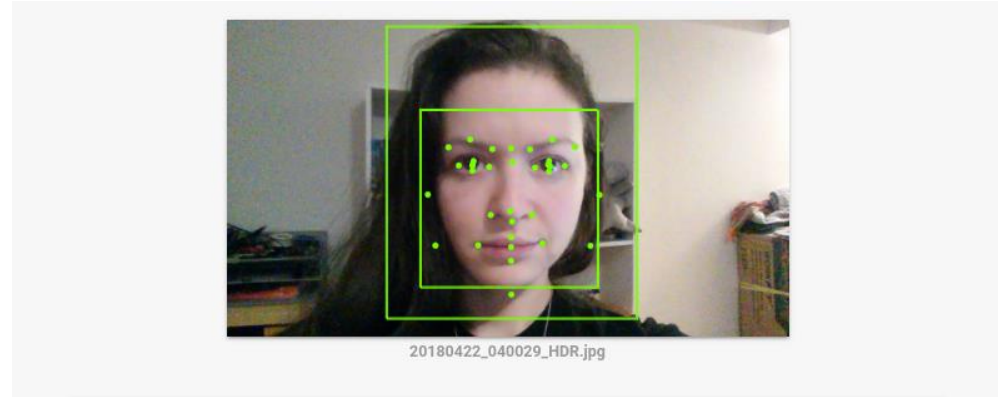
5 relief items
remaining

Biometric Authentication

Facial recognition

Voice authentication

Fingerprint (optional)



Automatic user account creation. No registration/setup necessary

Vision: Get App, Take Photo

- Shopkeeper downloads Vision App
- Residents select the allotted products
- Shopkeeper takes a photo, and voice signature of the buyer via app
- Shopkeeper takes photo of selected goods.
- Item or item value is deducted from the individual's disaster allotment
- Shopkeeper uploads information to Red Cross for reimbursement

Bonus: Red Cross can track which goods are selected in which region- such as anti-diuretic- anticipating disease outbreaks and further disaster fallouts.

With or Without Internet

Without Internet:

- Individual's purchase history
- Track shop credit/selected goods
- Track Time, GPS, ShopID

With Internet:

- Aggregate spending per person across shops/time
- Quantifiable purchase information across region- are people buying anti-diuretics and is further assistance required
- Automatic App Download- No convincing individual shopkeepers of voucher validity or distribution to each individual
- No risk of theft or funds misappropriation from the individual or other loss
- Just download app and take photos. Simple and secure.

Automatic App Download- No convincing individual shopkeepers of voucher validity or distribution to each individual

Reduce risk of fund theft, loss, or misappropriation from the individual

Just download app, take photos, get reimbursed. Simple and secure

Live Demo

Vision Advantages

- Simple: any smartphone user can use
- No setup on the ground required
- Network/internet service not required
- Enables post relief audit
 - Amount spent on each relief item
 - By shops and shopkeepers
 - By geo region
 - By demographics