



Improving On Imperfection

Matthew Merzbacher
Volunteer, Alameda County Community Food Bank
matthew.merz@gmail.com

So What, Who Cares?

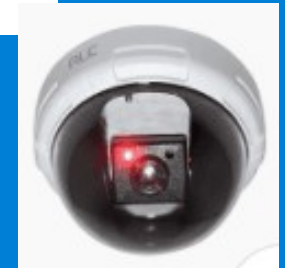
Airport aviation security is imperfect

- Huge number of false alarms, very low PPV
- Complex & unpredictable environment
- Many groups of users: Screeners, Travelers, Airports, TSA, Terrorists

Ultimately, have to relieve pressure

Proposed Responses

- Accept “as is”, or even dial down
- Use localized solutions, e.g. pesto-clearer
- Short-term use of deception
- Instruct passengers (and terrorists?) on how to pack
<https://www.safesuitcases.com/why-did-tsa-search-my-checked-luggage.asp>
- Apply selectively and dynamically



Embrace imperfection

- Automate more and add many additional systems

At the end, how will we know if we're better off?

[Backup] Details on Automation

Automation increases predictability, operator comfort, and performance [in normal circumstances]... and it's more scalable

Automation can relieve... repetitive or non-rewarding tasks for which humans are ill-suited

Invariably changes the active involvement into a monitoring role, which humans are particularly poor at doing effectively or for long periods

Techniques to train/retain vigilance (TIP, red-team, ETD sampling)

When things go wrong, automation gets in the way

Add confidence to know when to (auto-)disable automation

May add unintentional bias

Building successful automated systems requires LOTS of data

Simulated data can help (by an order of magnitude)