Ryan Bracken
DroneSense

Public Safety Drone
Cyber and AI Risk
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Chief Product Officer and CISO
DroneSense

Product Vision and Security

12 years as FBI Special Agent in Counterterrorism, Cyber, and Aviation Operations

Aerospace Engineer, US Air Force

BS and MS Aeronautical Engineering

FAA Commercial/instrument and Part 107 Remote Pilot Certificates

DroneSense

Software-as-a-service drone platform for Public Safety

- Flight Control App
- Video Streaming
- Fleet Management
- Remote Operations

Public Safety Drone Ops are Saving Lives

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But Drones Introduce Risk Too

The Drone Cyberattack That Breached a Corporate Network

CYBERSECURITY / 10.21.22 / Bruce Sussman

No one at the investment firm must have noticed the whirring of drone blades overhead — or heard the two miniature aircraft landing on the rooftop — if they made any noise at all.

But once there, the attack drones began carrying out their secret mission: breaking into the

This Hacker Tool Can Pinpoint a DJI Drone Operator's Exact Location

Every DJI quadcopter broadcasts its operator's position via radio—unencrypted. Now, a group of researchers has learned to decode those coordinates.

PHOTOGRAPH: EVGEN KOTENKO/GETTY IMAGES

Public Safety Risk Assessment

An agency needs an honest assessment of Cyber and AI risk

- Neither fit neatly in traditional cyber risk assessments
- Early adopters accept greater technical risk
- Local risk may increase while global risk decreases

Apples and Oranges

As a community member, I might have a different risk equation:

- Fear of crime or hazards
- Trust for Law Enforcement
- Is a drone going to fall on me?
- Is a drone going to collide with an aircraft I'm in?
- Am I willing to pay more taxes?
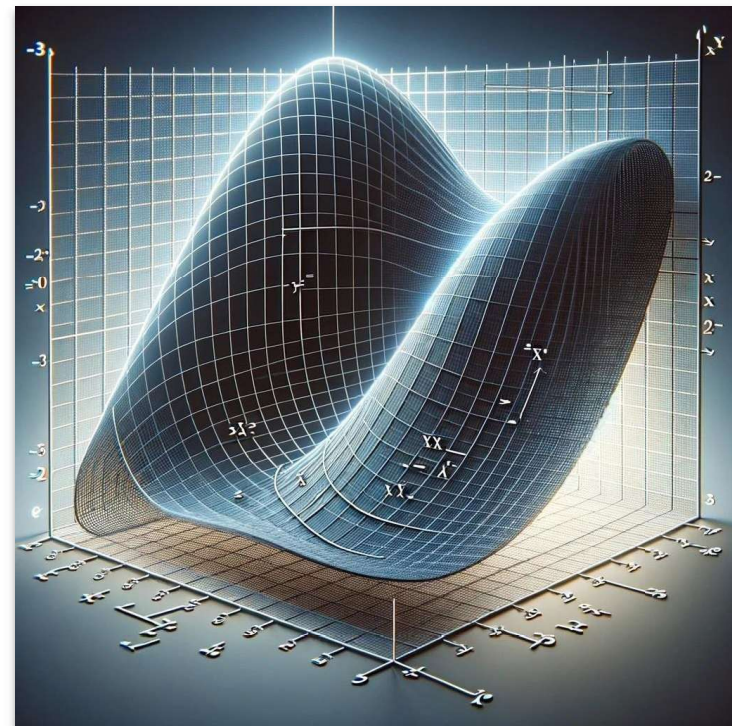
Let's Start with Cyber Risk

Address the Confidentiality, Integrity, and Availability individually and as a complete system:

- Hardware
- Software
- Network and Communication links
- Server architecture

Public Safety Requirements

- Affordable
- Cutting Edge
- Secure/Reliable

Public Safety Requirements

- Affordable
- Cutting Edge   } **Pick Any Two**
- Secure/Reliable

Assessing Cyber Risk

Use appropriate industry-standard accreditations:

- SOC 2
- ISO 27001
- FedRAMP

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...but be realistic

AI is Something Completely Different

Or is it?

- Fundamentally still software
- Runs on servers
- Should have all the same cyber protections

...but Public Safety must understand the unique risks with AI

AI is Creating Enormous Opportunities for Public Safety

National Institute of Justice breaks AI opportunities for Public Safety into four key areas:

- Video and Image Analysis
- DNA Analysis
- Gunshot Detection
- Crime Forecasting

AI is Creating Serious Challenges for Public Safety

Cops bogged down by flood of fake AI child sex images, report says

Investigations tied to harmful AI sex images will grow "exponentially," experts say.

by **Ashley Belanger** - Jan 31, 2024 12:08 pm

(credit: **SB Arts Media** | iStock / Getty Images Plus)

AI, facial recognition technology causing false arrests across nation

Calls for regulation grow as Black men across U.S. wrongfully jailed.

Black men across the U.S. are being wrongfully jailed through facial recognition technology.

By Ciara Cummings
Published: Nov. 30, 2023 at 4:23 PM EST | Updated: Dec. 1, 2023 at 9:16 AM EST
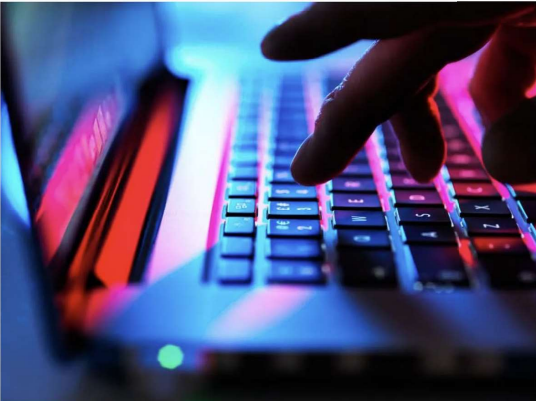
AI And Cybercrime Unleash A New Era Of Menacing Threats

Rabiul Islam Former Forbes Councils Member
Forbes Technology Council COUNCIL POST | Membership (Fee-Based)

Jun 23, 2023, 05:45am EDT

Rabiul Islam is a seasoned cybersecurity specialist. He is also the founder, CEO and managing director of TechForing Ltd.

AI Benefits and Risks are Greater When Coupled with a Drone

A drone gives AI an ability to act

- Target recognition and tracking
- False positives/negatives
- Unpredictable "edge" cases

The Real AI Weapons Are Drones, Not Nukes

Hollywood imagined that computers would launch a nuclear missile, but self-guided aircraft are what's truly changing the nature of combat.

By Phillips Payson O'Brien

Rely on Existing Frameworks
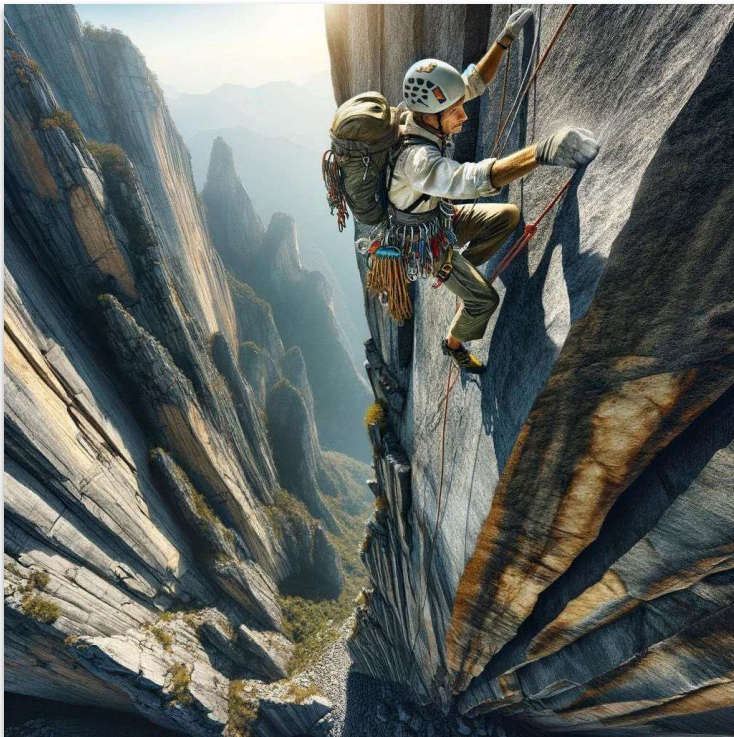

NIST AI Risk Management
Framework

AI Impact Assessment

Examples AI use at various potential Impact Levels

- Enhanced administrative reporting (Low)
- Predictive maintenance (Medium)
- Flight Control (High)

Back to Basics

Define the risk posed by a drone or AI system:

1) the possible negative impact, or magnitude of harm

2) the likelihood of occurrence

AI Risks for Public Safety

Some sample questions for Public Safety to ask purveyors of AI-enhanced systems

- What does it actually do? How does it work?
- How will it use our data?
- How (and how often) is the model updated?
- How could it impact us if it goes wrong?

Must be able to answer these questions using absolutely NO JARGON

Privacy, Bias, and Community Trust

UAS platforms must be secure and reliable but how do we measure the less tangible effects on society?

- How does the system protect privacy?
- What elements could create biases?
- Is my deployment model equitable?

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Am **I** using this thing correctly?

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→ Am I using this thing correctly?