

Guardians of Cybersecurity: Deploying IoT devices via Drones and Dropboxes





ALEX'S ODYSSEY

- Senior Security Consultant
- Brads equivalent of James Bond's Q.
- Makes all Brad's ideas come to reality.
- Worked in IT Security for 6+ years
- Started on the blue team as a Network Security Analyst
- Started on the red team with Network and Wireless penetration testing then transitioned to Web Application and Mobile



BRAD'S "sno0ose" ORIGIN

- Senior Director of Security @ Prescient Security – manage 5 teams of independent hacker types in all areas of offsec
- Experienced cybersecurity professional skilled in hacking and managing teams of hackers. Social Engineering and physical security is my specialty
- Proud husband/dad, speaker, educator, mentor, and veteran dedicated to educating and protecting others. 303 member. (If you know who they are)
- Prior companies include – DIA, DOD, Lockheed Martin, Optiv, and the Supreme Court of Nevada
- Employed in information technology since 2001
- 14 years in information security

THE RACCOON SQUAD EMERGES!!!!



Alex and Brad's fascination with drones and video games further catalyzed this integration, giving birth to...

The Raccoon Squad

WHAT IS WATCH DOGS 2?

- Concept = Hack into various electronic devices connected to the ctOS system with his in-game smartphone.
- Kids think they can hack by hitting “X”

**** DISCLAIMER ****

We did not bring the actual device because we don't want to get drones banned in Canada;)



BRINGING THE CONCEPT TO LIFE

Introducing:

- Flying Raccoon
 - Hacking device with code to come open-sourced
- Sneaky Raccoon
 - The drone platform

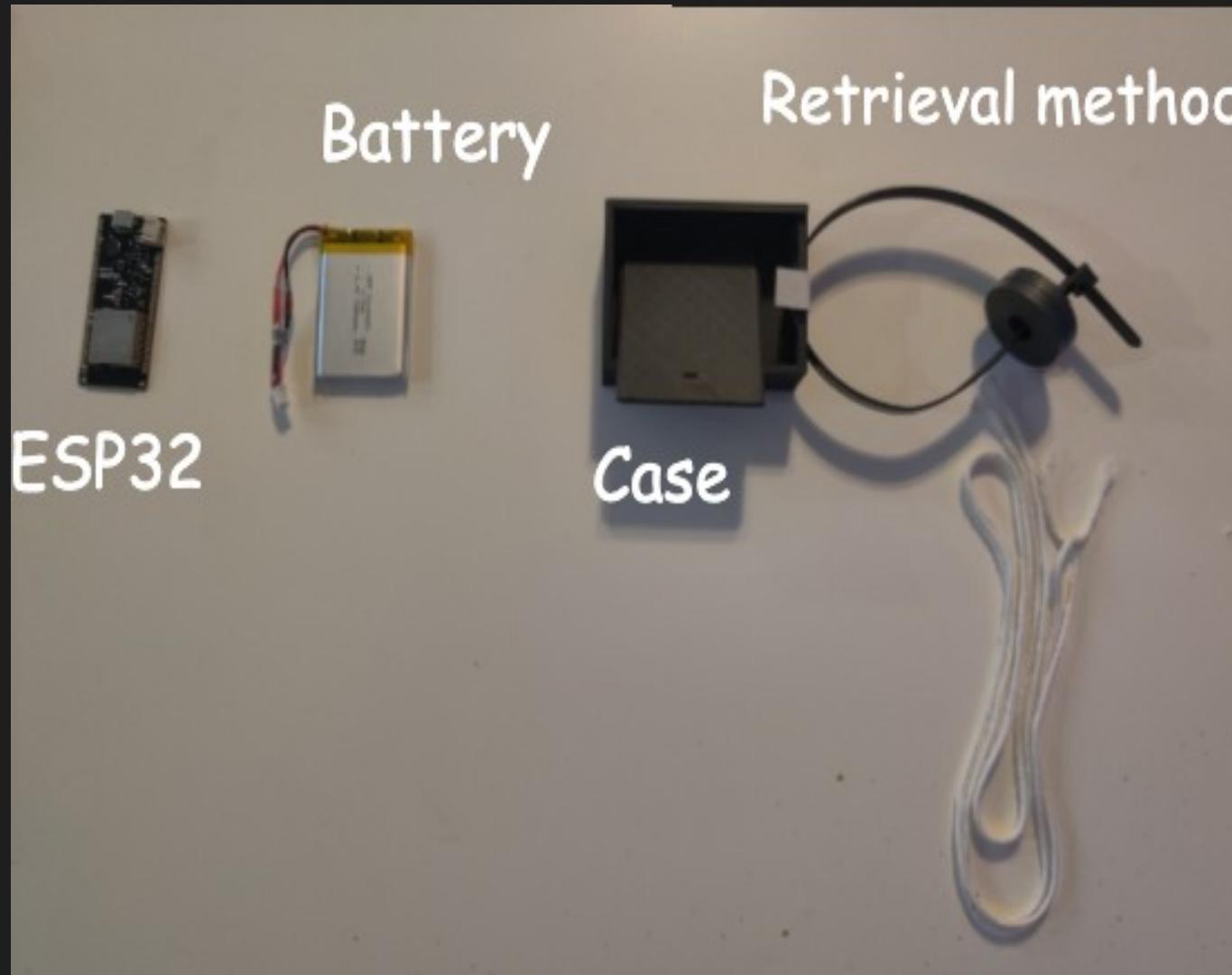


INTRODUCTION TO FLYING RACCOON



- Overview:
 - Components needed
 - Objectives and capabilities

PHYSICAL COMPONENTS OF THE FLYING RACCOON



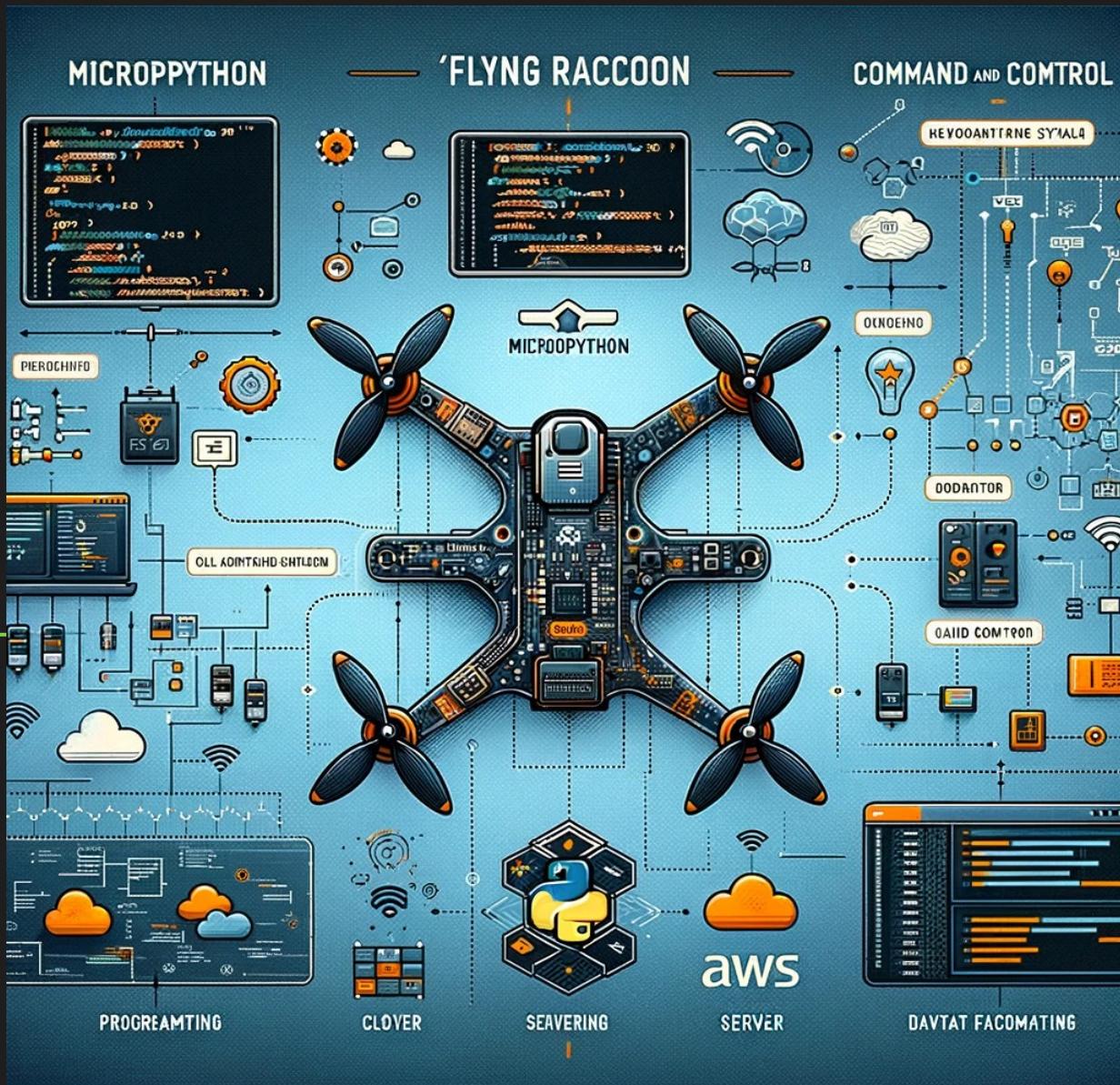
WHAT IS NEEDED:

- ESP32 / ESP8266
- Battery

OPTIONAL:

- Case
- Retrieval Method

SETTING UP THE FLYING RACCOON



Exploring the technical side:

- Getting the correct board
- Flashing ESP32 with Micro Python
- Powering the device
- AWS server for C2

CHALLENGES WITH FLYING RACCOON



Potential Issues:

- Range Limitations
- Transmission Power
- Recovery Issues
- Toolset

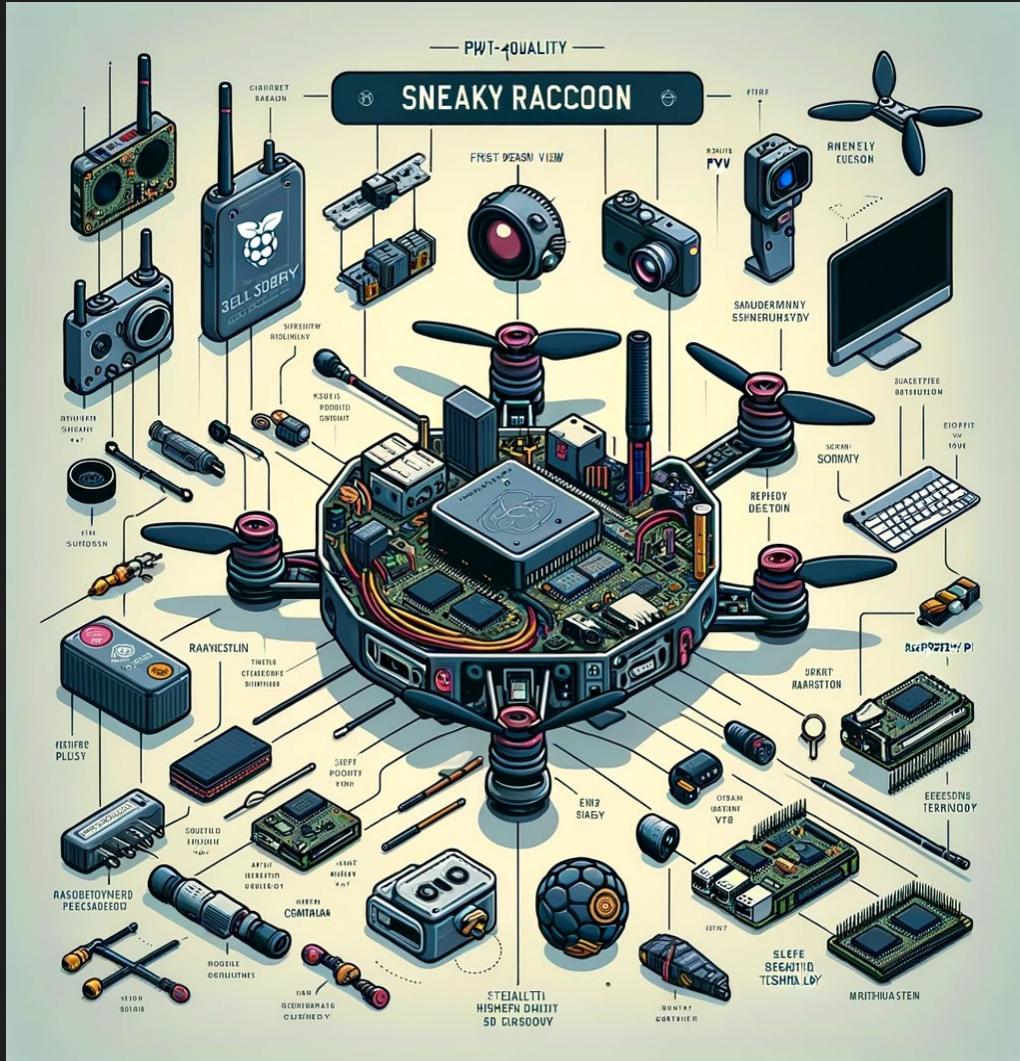
INTRODUCTION TO SNEAKY RACCOON



Overview:

- Components needed
- Advanced system capabilities

PHYSICAL COMPONENTS OF THE SNEAKY RACCOON



What is needed:

- FPV Drone that can support weight
- Method to hold Flying Racoons

Optional:

- Release Method (the "Fun" part)
- Retrieval Method

DRONE THAT CAN SUPPORT WEIGHT



METHOD TO HOLD FLYING RACCOON



FLYING RACCOON FOR ENGAGEMENT



RELEASE/RETRIEVAL METHOD



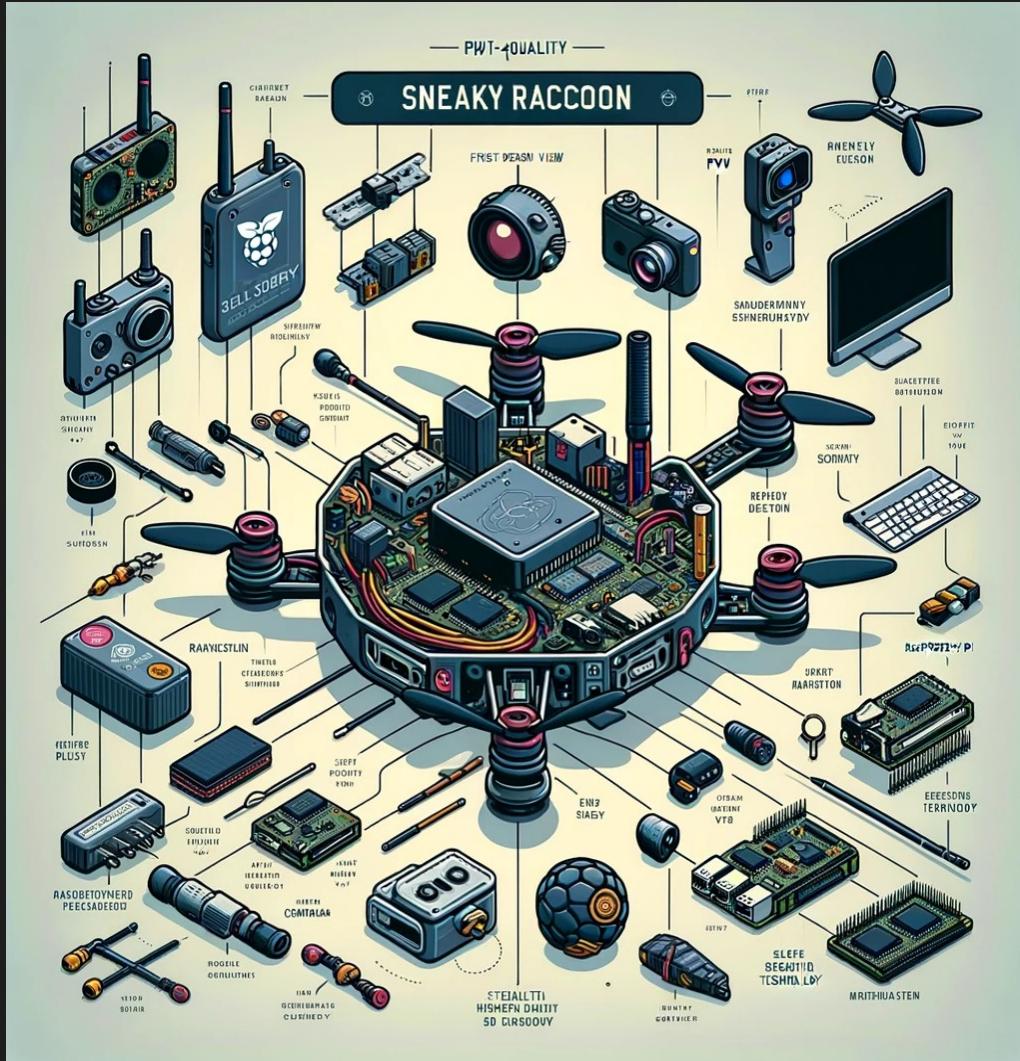
SETTING UP THE SNEAKY RACCOON

Exploring the technical side:

- Ensuring drone is operational
- Validating it is 100% safe to fly
- Prepping attacking component
- Attaching attacking component
- Powering on the device
- Remote access technologies



CHALLENGES WITH SNEAKY RACCOON



Potential Issues:

- Legal ramifications
- Flying the device
- Recovery issues
- Battery life of device

TECHNICAL ASPECTS OF THE DEVICES

Flying Racoons:

- MicroPython
- Why not an Arduino?
- Other fun stuff

Sneaky Raccoon:

- Kali Arm64
- Aircrack-Ng
- Kismet
- Bettercap
- Responder
- More fun stuff

ATTACK STRATEGY OF SNEAKY RACCOON



IN-DEPTH LOOK AT THE ATTACK STRATEGIES:

Main attack strategies:

- WarDroning™
- Credential captive portal utilizing an Evil Twin Attack
- Command and Control functionality
- Recovery

• Additional Attack strategies:

- PMKID Capture
- De-Authentication attacks
- DOS attacks (who cares but can be done)

Repository with these and more!

<https://github.com/risinek/esp32-wifi-penetration-tool>

RECOVERY AND STEALTH OF FLYING RACCOON



Stealthy Placement
Deployment
Methods
Recovery Process

ENHANCED CAPABILITIES OF SNEAKY RACCOON

Advanced
reconnaissance and
data collection

Combining drone with
Raspberry Pi and WIFI
adapter

Usage with software
defined radios





REAL-WORLD APPLICATIONS

Exploring practical applications in cybersecurity and surveillance

POTENTIAL IMPACT AND WEAPONIZATION



Discussing the potential impact
and risks



Weaponization with advanced
technologies

ETHICAL AND LEGAL CONSIDERATIONS



Addressing ethical and legal aspects



Need for awareness and preparedness

QUICK DEMONSTRATION OF DEPLOYING AND RETRIEVING FLYING RACCOON WITH ONE OF THE SNEAKY RACCOONS



Videos shown here

Q & A

