

CIVIL AIR PATROL · SQUADRON BRIEFING

ELON DRONE DAY 2026

What we saw at Elon University — Friday, October 30, 2026



The New Civil Air Patrol Display

- Table cover
- Roll-up display
- Civil Air Patrol pens
- Brochure holders with multiple brochures from national
- Books displayed:
  - Aerospace: The Journey of Flight
  - Aerospace Science: A Journey into Aviation History

Not shown:
- Pop-up tent
- The six-foot table

Suggested:
- A model drone
- A model aircraft (Cub or 182)



ON THE GROUND AT ELON

Reporting from Drone Day

Jack Martin

Teaches sustainable energy, electric cars and electric aircraft

One day of talks and live flight demos — here’s what stood out for a CAP unit.

THE EVENT

A free, daylong drone summit at Elon University

- Hosted by Elon’s School of Communications with NC AUVSI
- Morning talks in the auditorium; live flight demos in the afternoon
- Last year’s edition drew a record 185 attendees, vendors and volunteers
- Supporters included the FAA, Wing, NC State, NC Cooperative Extension, DroneResponders — **and Civil Air Patrol**



THE DAY AT A GLANCE

Four talks, then flying in the parking lot

Time	Session	Presenter
9:40 am	Keynote: Preflight Checks for Intelligent Machines	Sambit Bhattacharya, Ph.D., Fayetteville State
10:15 am	Open-Source Drone Mapping for Disaster Response	Michael Berryann, NC A&T
11:35 am	Using Drones to Manage Invasive Species	Virginia State Parks
12:00 pm	Safer Skies, Compliant Programs	Kevin Teen, Aloft / Versaterm
1:25 pm	Flight demo: agricultural spray drone	PAC Aerial Applications
1:45 pm	Flight demo: RF test drone and custom builds	Wilstair

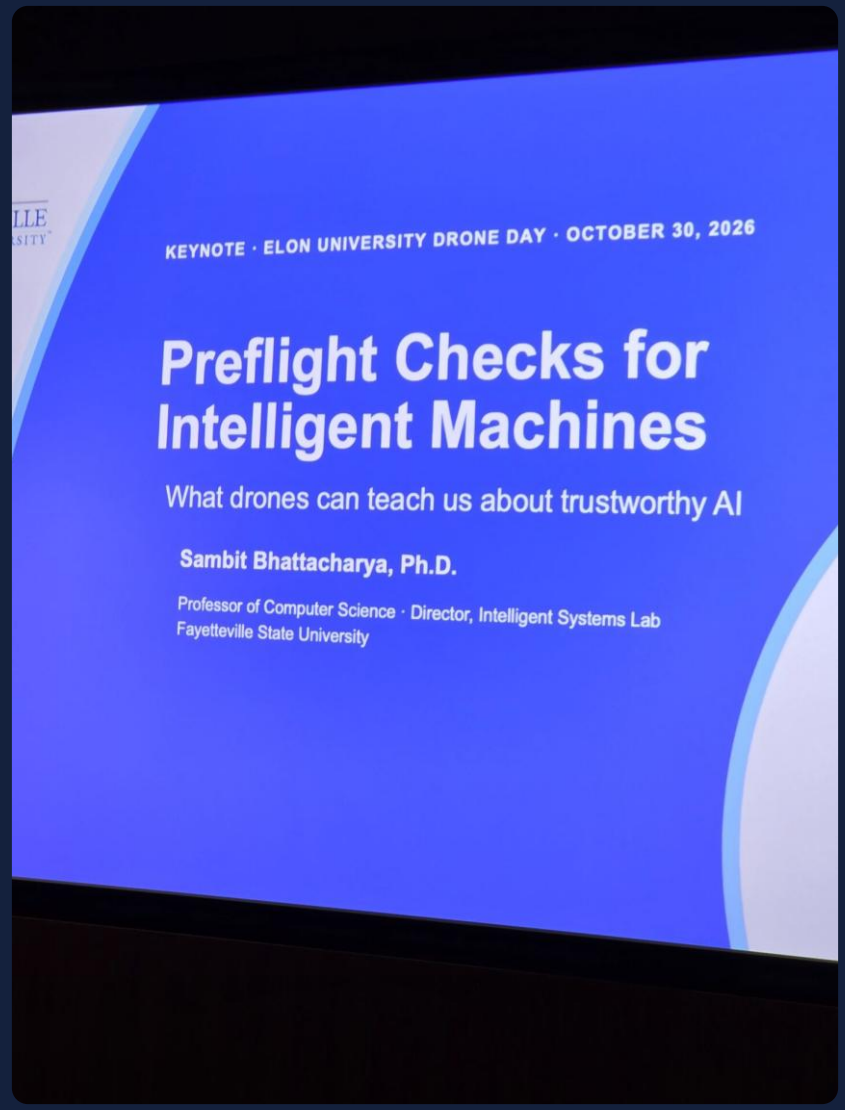
Times are approximate, taken from photo timestamps. Shaded rows were outdoor demos.

KEYNOTE · FAYETTEVILLE STATE UNIVERSITY

Preflight checks for intelligent machines

Dr. Sambit Bhattacharya used drones to talk about trustworthy AI. A pilot never skips the preflight — so before trusting an AI's answer, ask the same question: did anyone validate the inputs?

Check the inputs before you trust the output.



DISASTER RESPONSE · NC A&T

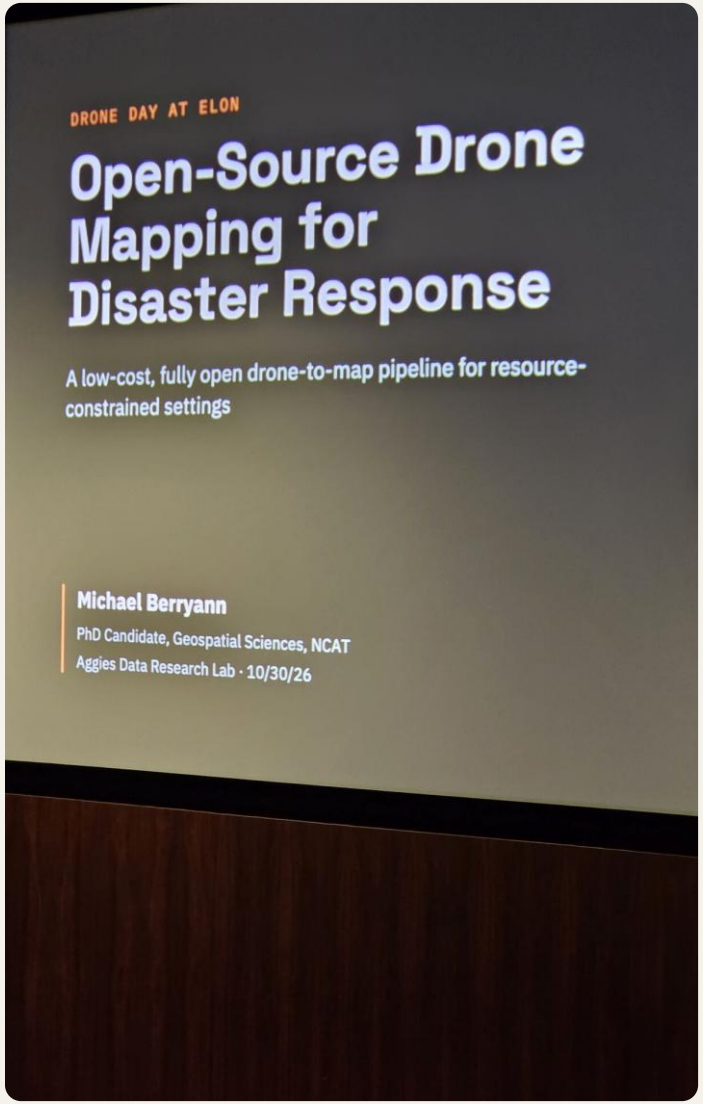
Drone-to-map for $0 in software

Michael Berryann’s fully open-source pipeline for mapping damage.

Fly
ArduPilot or PX4, grid planned in Mission Planner or QGroundControl

Process
WebODM on your own laptop — no cloud required

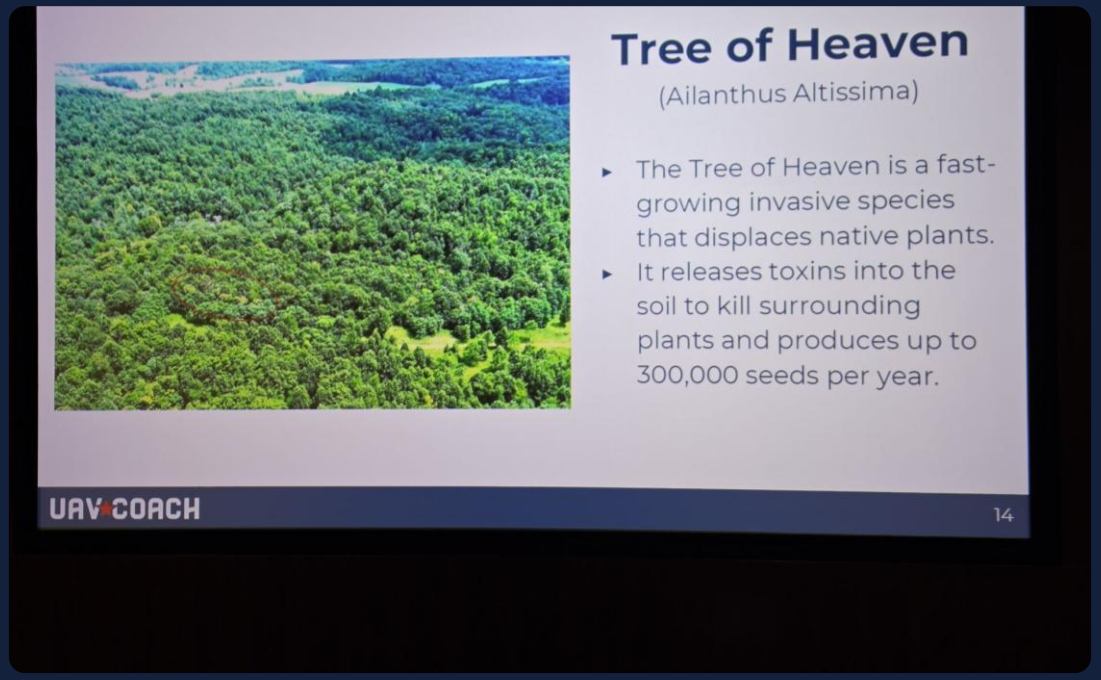
Analyze
QGIS to measure, mark damage and print maps



CONSERVATION · VIRGINIA STATE PARKS

Finding invasive species from the air — then treating them





WHAT THE DRONES HUNT FOR

Three invaders on the target list

Tree of Heaven

Ailanthus altissima · from China

- Up to 300,000 seeds a year
- Releases toxins that kill nearby plants
- Favorite host of the spotted lanternfly

Imported fire ants

Solenopsis · from South America

- Spreading through southern Virginia since 2017
- Quarantines in 30+ Virginia localities
- Drones help map mound locations

Kudzu

Pueraria montana · from East Asia

- “The vine that ate the South”
- Smothers trees, fences and hillsides
- Its blanket shape stands out from above

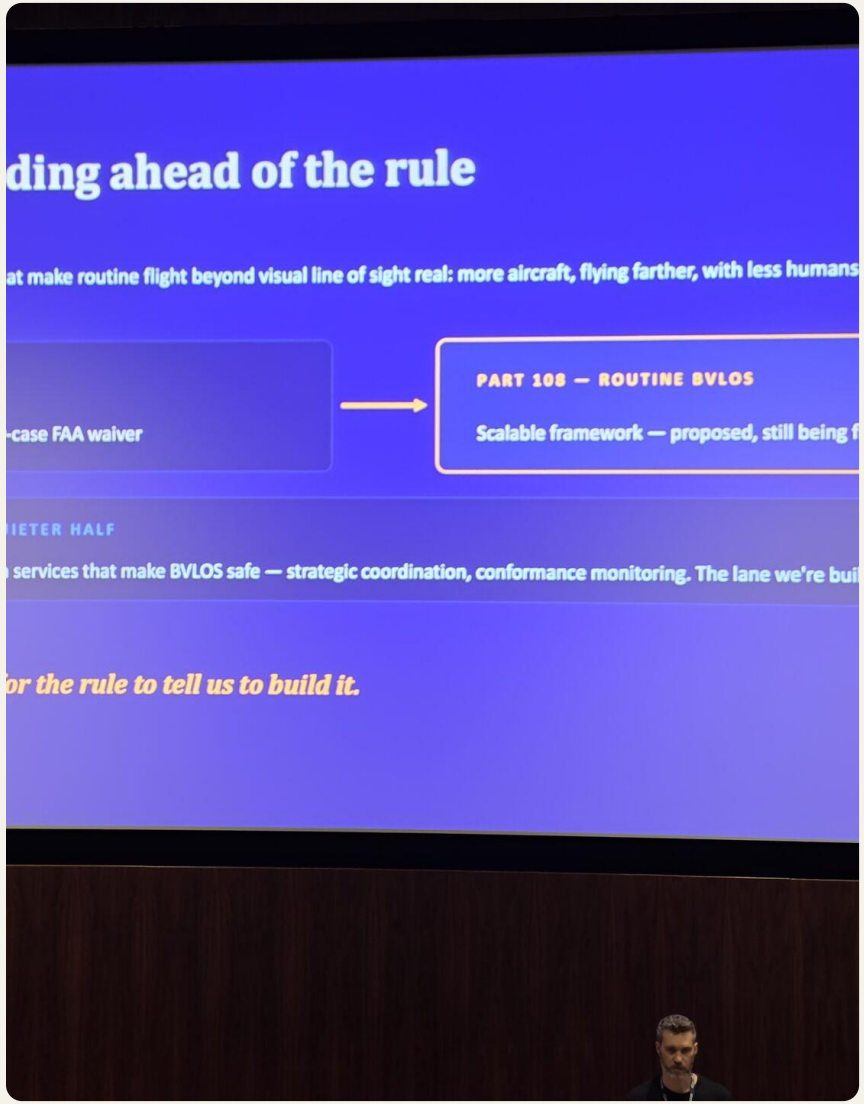
PUBLIC SAFETY · ALOFT / VERSATERM

The airspace layer of public-safety drones

Kevin Teen showed how three tools now work as one: **DroneSense** for fleet management, **Versaterm** to put drones in 911 dispatch, and **Aloft** for airspace data and FAA authorizations.

Watch for Part 108

The FAA's proposed rule for routine beyond-visual-line-of-sight flight. Final draft has been under White House review since July 2026; until it's published, BVLOS still needs a case-by-case Part 107 waiver.





FLIGHT DEMO · PAC AERIAL APPLICATIONS

It’s not just about the drone

A farmer-owned spray outfit from Dobson, NC. Their truck is a rolling mix station — tanks, pumps, hoses and a generator.

- Know the chemistry: what to mix, how much and in what order
- Pesticide applicator licensing from the state
- FAA approval to dispense from the air



DRONE ID · BEST MATCH

DJI Agras T50

Spec	T50
Rotors	8, on 4 arms
Spray tank	40 L
Spreader tank	75 L
Max takeoff	92 kg (~203 lb)
Spray width	4–11 m

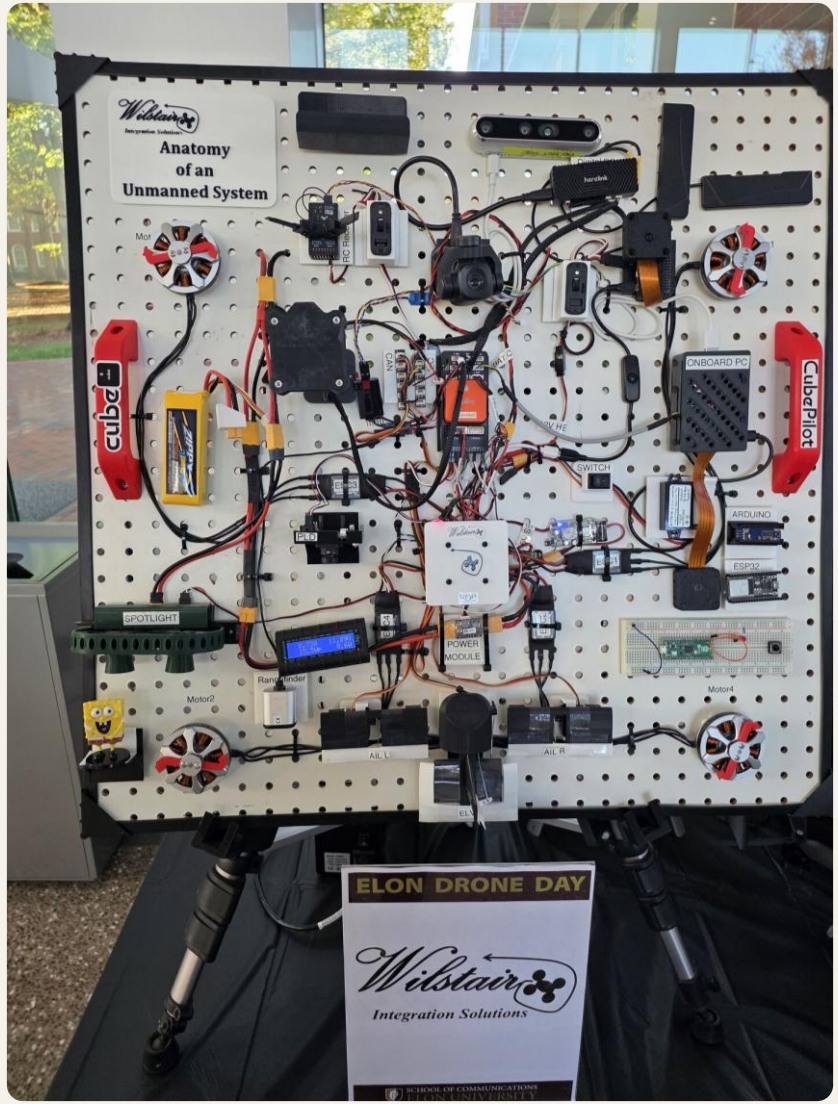
Matched by its stacked rotors and tank; PAC sells the T50. A sibling T-series model is possible.

FLIGHT DEMO · WILSTAIR, BURLINGTON NC

A local shop that builds drones for hard jobs

Wilstair Integration Solutions does drone engineering, training and education from Burlington, right next door to Elon, and runs its own remote test facility there.

Their “Anatomy of an Unmanned System” board laid every part of a drone out on pegboard: motors, speed controllers, flight controller, GPS, radios and battery.



DRONE ID · CUSTOM BUILDS

Two one-off drones built for a specific job



RF test drone

Bristling with antennas, it acts as a flying signal source to check whether military counter-drone defenses can detect and track it.



Small 3D-printed quad

A compact frame printed and built to order for another client’s mission.

FOR OUR SQUADRON

Four things worth bringing back

Disaster mapping is within reach

Free tools like WebODM and QGIS turn our aerial photos into damage maps.

The rules are about to change

Part 108 could open routine BVLOS flight. Keep our pilots current.

Know the mission, not just the stick

The spray crew’s real skill was chemistry. Ours is search, imagery and safety.

A ready-made cadet project

An anatomy board or a 3D-printed frame makes drone tech hands-on.

QUESTIONS?

Elon Drone Day is free and open to the public — let’s bring a group next fall.

Sources: Elon University; PAC Aerial Applications; Wilstair; UAV Coach on Part 108; DJI Agras T50 specs; Appalachian Voices on Virginia fire ants. Photos: our own.