

ALEX FRALEY

Robotics & Aerospace Test-Method Engineer

Paris, France · U.S. citizen · Authorized to work in France
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SUMMARY

Experienced aerospace and robotics engineer with five years of continuous NIST service (June 2020–September 2025) in emergency-response robot and UAS test-method development, test-hardware redesign, repeatability, systems integration, and validation. Current FAA Part 107 remote pilot with completed French Open-category A1/A3 competency and UAS operator registration. Software, automation, and graduate data-analytics work provide supporting range.

CORE TECHNICAL COMPETENCIES

Robotics / Aerospace Test-Method Engineering: Emergency-response robot and UAS test methods · calibration-target work · repeatability-focused hardware redesign

Systems Integration, Verification & Validation: Test protocols · SOPs · experimental documentation · measurement-focused verification

UAS Operations & Compliance: FAA Part 107 · FAA registration and Remote ID · French A1/A3 competency and operator registration · EASA/DGAC research

Engineering Software & Data: Python · C#/.NET/WPF · TypeScript/React · SQL · JSON Schema · agentic and multi-agent workflows

PROFESSIONAL EXPERIENCE

National Institute of Standards and Technology (NIST) Jun 2020 – Sep 2025

Sensing and Perception Systems Group

Five years of continuous robotics and UAS test-method engineering across two appointments.

Robotics Research Engineer

Dec 2023 – Sep 2025

- Contributed substantially to the design, development, evaluation, or implementation of calibration-target elements used in NIST emergency-response robot test-method work, supporting consistent robot scoring across test sites.
- Redesigned UAS drop-test hardware for run-to-run repeatability and led a federal drone fleet's FAA registration and Remote ID compliance transition.
- Co-authored “Adapting NIST Aerial Drone Tests for Thermal Identification, Inspection and Suppression of Wildfires” (Fraley, Nowery, Devine, Jacoff, Oh) — IEEE CCWC 2025; NIST publication, December 2024.

Pathways / PREP Researcher

Jun 2020 – Dec 2023

- Contributed to ASTM E54.09 standards work through NIST by reviewing and updating ASTM E3132/E3132M-17 documentation in preparation for re-balloting.

Curiosell Systems LLC

Apr 2026 – Present

Independent Engineering · Paris, France

- Design and build independent software across web, iOS, and Windows, working end to end from architecture through automated verification.

EDUCATION

Master of Science in Data Analytics (In Progress), University of Maryland Global Campus (UMGC)

B.S., Aerospace Engineering (Space Track) — University of Maryland, A. James Clark School of Engineering · August 2023

A.S., Aerospace Engineering (Honors) — Montgomery College

CREDENTIALS

FAA Part 107 Remote Pilot Certificate — currently valid

French Open-category A1/A3 competency — completed June 2022

French UAS operator registration through AlphaTango — completed June 2022