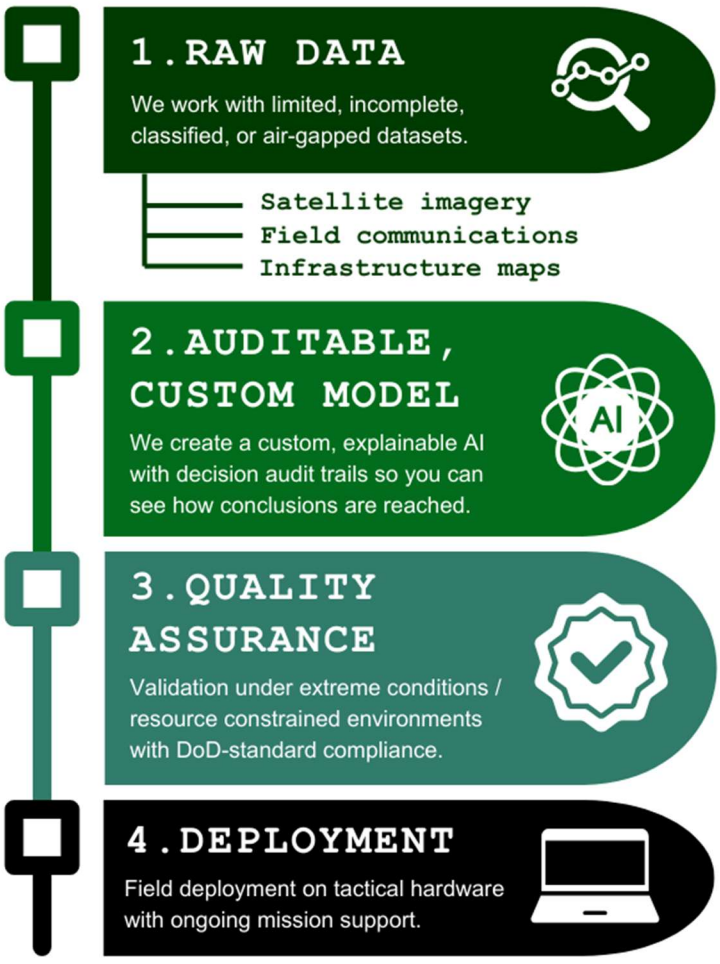
JAXORIK AI RESEARCH GROUP

Statement of Capabilities

6300 Riverside Plaza Dr. NW, Albuquerque, NM 87120
505-506-6884 | contracts@jaxorik.com | www.jaxorik.com

OVERVIEW

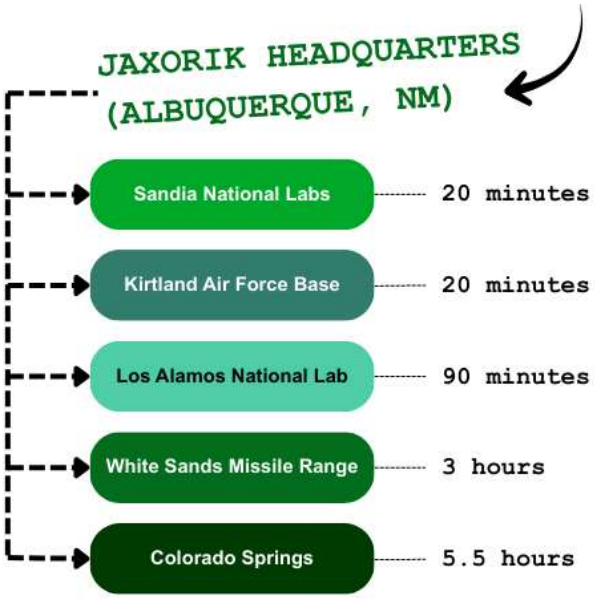
Jaxorik is a research and development firm based in Albuquerque, New Mexico. We specialize in explainable, mission-ready AI systems for field work. We are ready to accept sub-contracts from Prime Contractors.



ABOUT OUR LEADER

Rae Chipera is a data science PhD candidate and holds an MBA in Quantitative Finance. Chipera is a former Marine Corps signals intelligence (SIGINT) analyst and Iraq veteran with security clearance eligibility.

She also trained at the Defense Language Institute (DLI) and completed professional machine learning and deep learning programs at MIT and Carnegie Mellon.



HOW IT WORKS

Our AI models run on limited computing resources and are designed to handle chaotic, noisy, messy, or incomplete data without losing stability or creating false information.

We customize the baseline deliverable model to your mission and install it directly onto a laptop. It arrives ready to accept your data, and the model is easy to fine-tune to your needs.

SAM.GOV INFORMATION

UEI: K8ENCCGZ2M13 | **CAGE:** 11X70
NAICS Codes: 541715, 541511, 541690, 541512

WOSB and SDVOSB Certified

Registered in Disaster Response Registry

We do not develop or deploy autonomous weapons systems, discriminatory algorithms, or technology that conflicts with U.S. national security interests.

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DIFFERENTIATORS

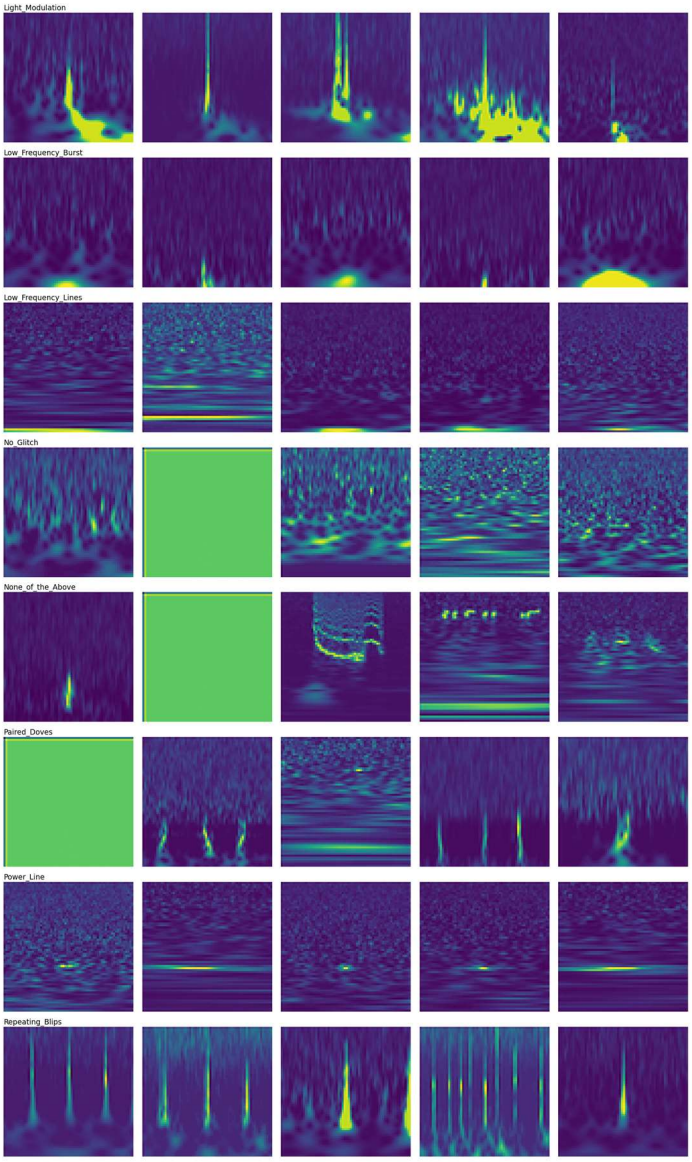
- **We build our models with tactical hardware to run offline.** There is no internet in the field. We deliver our models pre-installed on a laptop, and no internet or cloud access is needed.
- **Our models are trained on broken data.** Most vendors use clean data, which can cause models to learn to ignore the exact conditions that exist in a crisis.
- **Founder has firsthand SIGINT field experience.** As a veteran-owned company, we understand what it is like to work with incomplete, noisy, and mission-critical data.
- **Our models are research-backed.** Our CEO is an active PhD researcher who contributes to the peer-reviewed publication pipeline, ensuring our methods are grounded in current research.
- **Our models are auditable by design, not as an afterthought.** Decision audit trails are built into our models from the start, not retrofitted for compliance purposes.

CORE COMPETENCIES

- Explainable AI and auditable model development
- Reservoir computing and Echo State Networks
- Edge and offline AI deployment
- Anomaly detection and signal classification
- Satellite and drone imagery analysis
- Resource-constrained machine learning

REPRESENTATIVE WORK

Satellite Anomaly Detection: Edge-deployable anomaly detection pipeline for satellite imagery, designed to operate without cloud infrastructure. Demonstration available at github.com/jaxorik.



LIGO Gravity Spy Glitch Detection: Applied fractal activation functions in Echo State Networks to classify gravitational wave detector anomalies from real-world spectrogram data. Dataset included corrupted and missing samples standard models would require omission of (green boxes). Achieved AUC 0.877 — outperforming traditional activation functions on noisy, incomplete data.

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JAXORIK AI RESEARCH GROUP is SAM.gov registered and certified for federal contract work, subcontracting partnerships, and direct awards under **WOSB and SDVOSB** set asides. Capable of supporting R&D and operational deployment across civilian, defense, and emergency sectors.