



L3HARRIS

FAST. FORWARD.

IARPA VIDEO LINCS PROPOSER'S DAY

LIGHTNING TALK

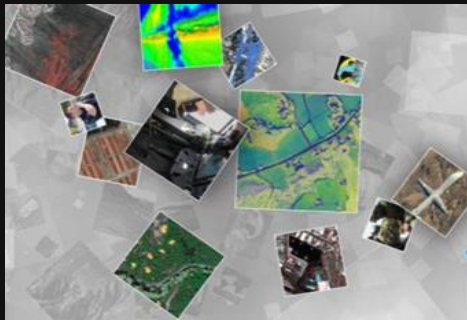
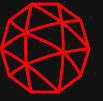
07 Feb 2024

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L3Harris Autonomous Intelligence Solutions (AIS) Overview



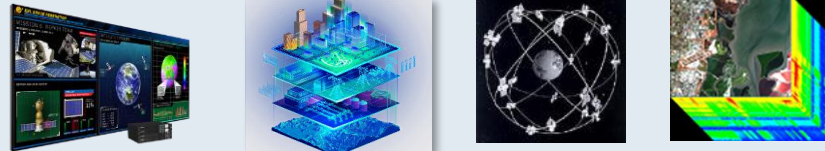
AutoIntel

Locations

Dayton, OH
 Herndon, VA
 Los Angeles, CA
 Melbourne, FL
 Rochester, NY



Capability & Conflict Analysis



- Modeling & Simulation
- Architecture trade studies
- Data engineering for AI readiness
- Workflow management
- Niche phenomenology expertise

Data & Decision Processing



- Real-time image product generation
- Processing at scale; multi-cloud environments
- Data fusion algorithms
- Product ordering and delivery services
- National and tactical users worldwide

Data Enterprise critical to operationalizing intelligence for decisions at speed and scale

Core Capabilities

- Validated modeling / simulation
- Numerous on-site Scientists with key mission expertise
- EO/IR data processing
- SAFe/Agile software development
- Cloud optimized processing and analysis

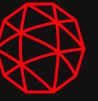
Key Customers



Operationalized intelligence enabled thru differentiated AutoIntel capabilities

L3Harris

R&D in Deep Learning Pipelines for Detection → Tracking → Custody → Behavior



Detection



Tracking



Behavior (Global)

“Where is this vehicle going?”

... given learned track features from 100,000+ samples of global distribution

“Have we seen this vehicle before?”

... throughout *six months* of continuous ground-based FMV collection
(top $K = 9$ matched tracks shown)



ReID



Behavior (Local)

“Where is this vehicle going?”

... given learned track features from 100+ samples of local distribution

(initialized with global model)

“Have we seen fire trucks?”

... given a *random image* from a Google search



ReID



“Was custody maintained for the object-of-interest?”

... given an *additional sensor* with *different capture geometry*



ReID

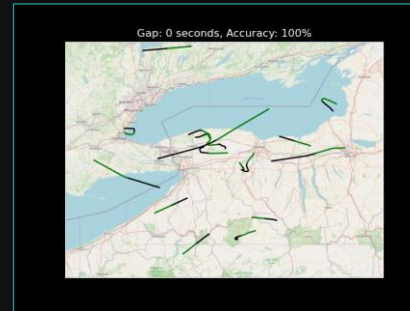




Offering Strengths

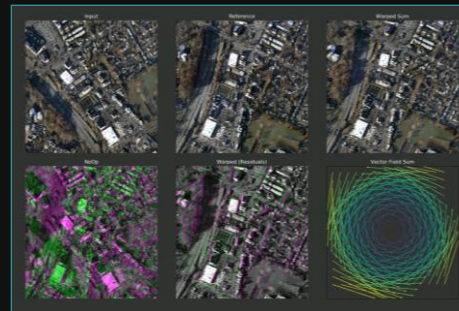
ReID & Behavioral Analysis

- Image-Based Object ReID
- Motion-Based Object ReID
- Normalcy Generation (Global & Local)
- Anomaly Detection (Global & Local)



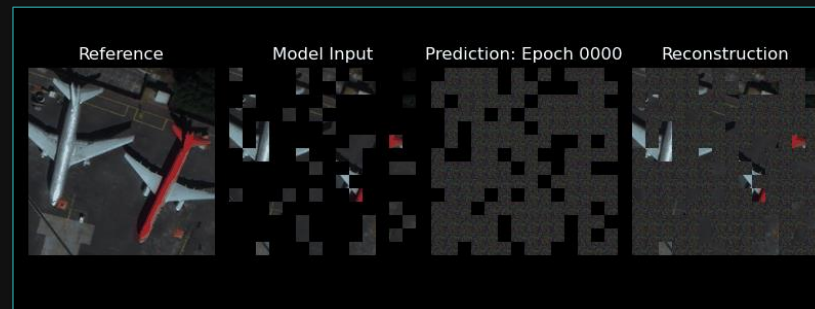
Deep Learning

- Architecture Design
- Learning Methodologies
- ML Pipelines & Infrastructure
- AI Solution Integration



Data Domain Expertise

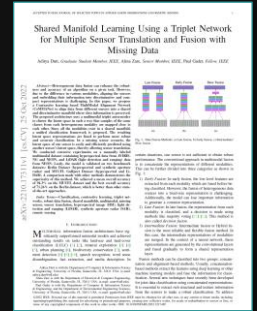
- Overhead / Ground-Based Imagery & FMV
- Proven Modeling & Simulation Experience
- Proven Multimodal Image Exploitation



Seeking Partnerships

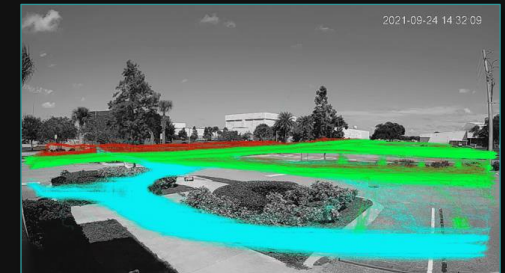
Fusion

- L3Harris has partnered with University of Florida to study AI fusion strategies
- General purpose fusion does NOT exist
- Seeking additional expertise in multimodal fusion with diverse dimensionality



Tracking

- L3Harris has developed and implemented different tracking algorithms
- General purpose tracking does NOT exist
- Seeking additional expertise in object tracking in various collection geometries



L3Harris is currently a prime for the IARPA HAYSTAC Program and seeks partnerships to improve its expertise in imaging & behavioral analysis for the IARPA VIDEO LINCS Program