AI is Your Friend, Not Your Replacement

How AI Can Modernize the GIS Professional's Role In Today's World

Company Background

- Founded in 2020
- Built world's first full-scale 3D digital twin for Microsoft FlightSimulator
- Focused on defense, intelligence and local government
- Backed by defense and government-focused investors

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Unleash YOUR Potential – From Pixels to Insights

INPUT
Any Raster Data

ORCA HUNTR™
No-Code AI

REPLIKA SYNTH3D™
3D Terrain Generation

Blackshark enables **anyone** to extract insights from pixels in minutes, turning sensor and GIS data into analytics-ready 3D environments

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What AI Means to You – What Comes to Mind?

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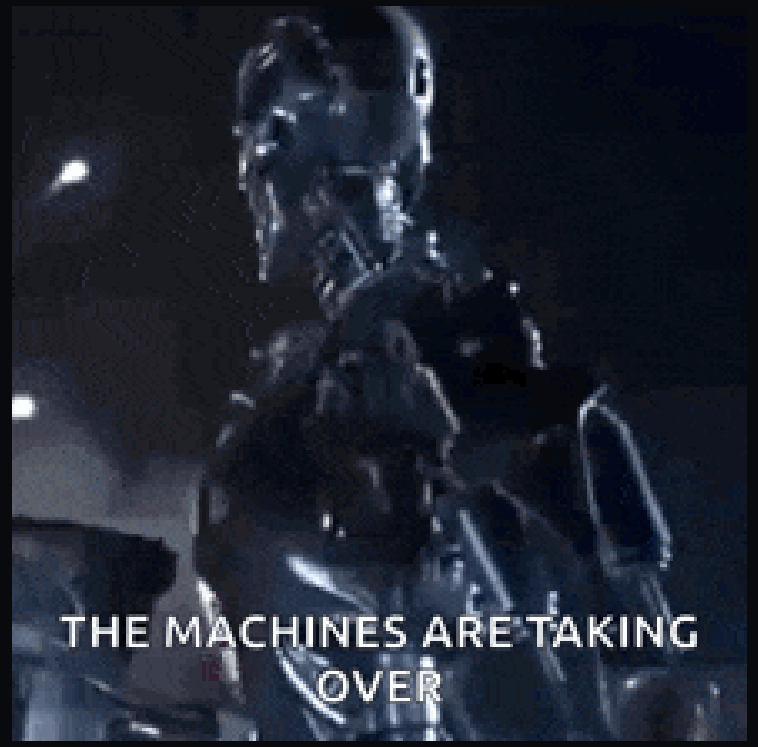
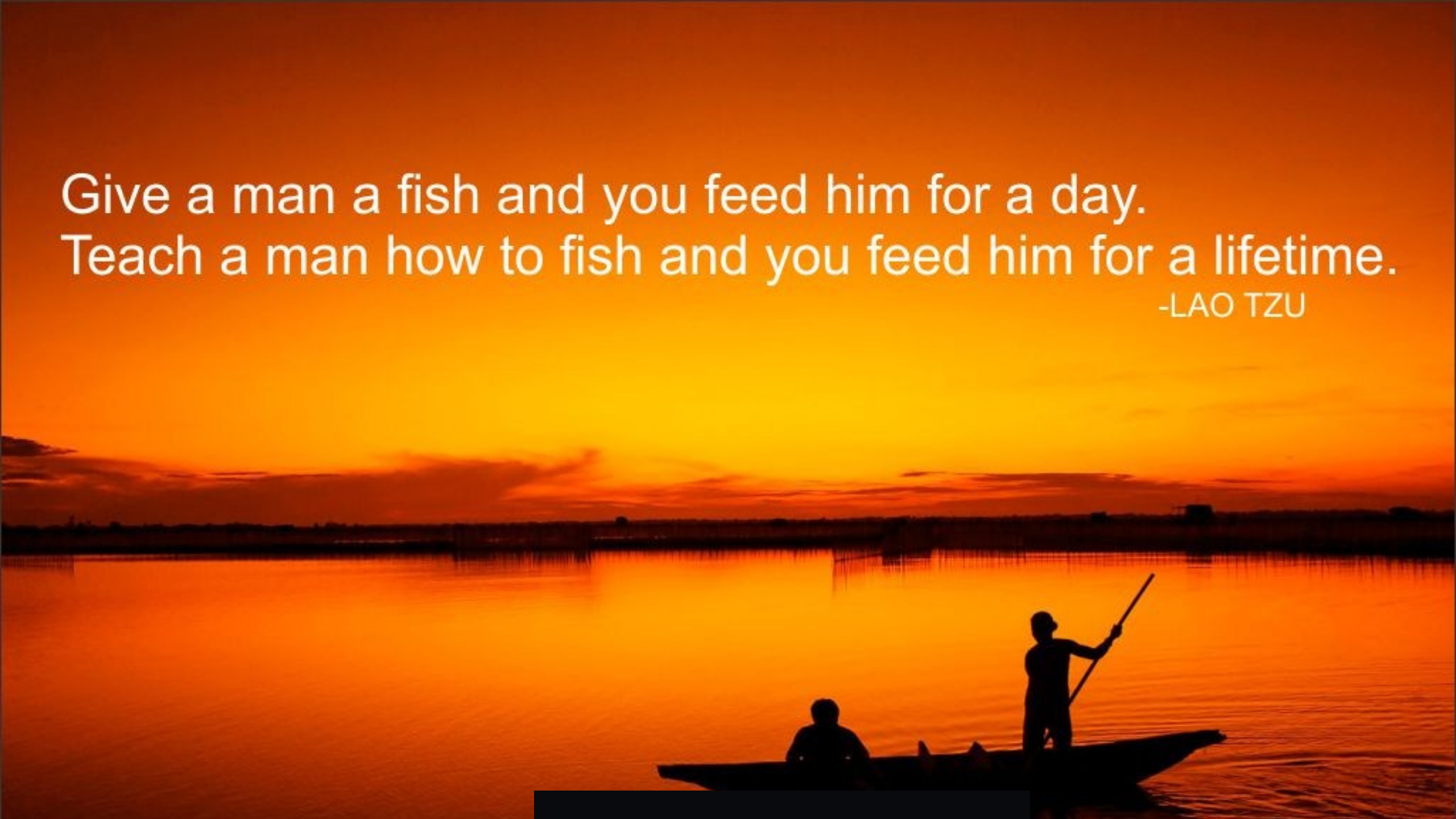
What AI Means to You – Hasta la Vista, Baby?



GIS Today


Give a man a fish and you feed him for a day.
Teach a man how to fish and you feed him for a lifetime.
-LAO TZU

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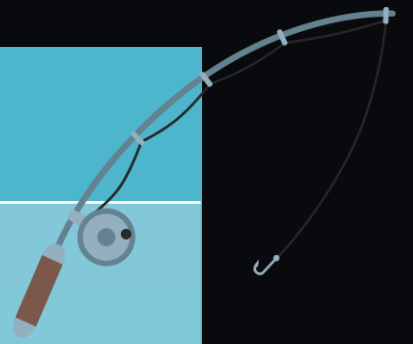
The GIS Industry Today – More Fish, Please

Buy	Build
Do the work for us	Do it ourselves
Cost more $, but saves time	Costs time…which is also $
Licensing Issues	Public Data
Proprietary/"black box"	Custom/Purpose-Built



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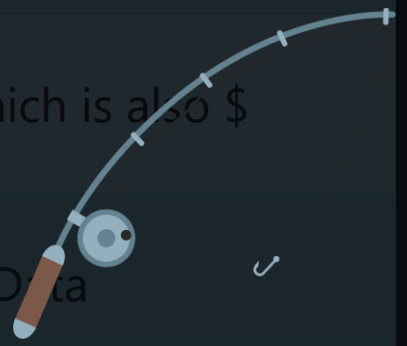

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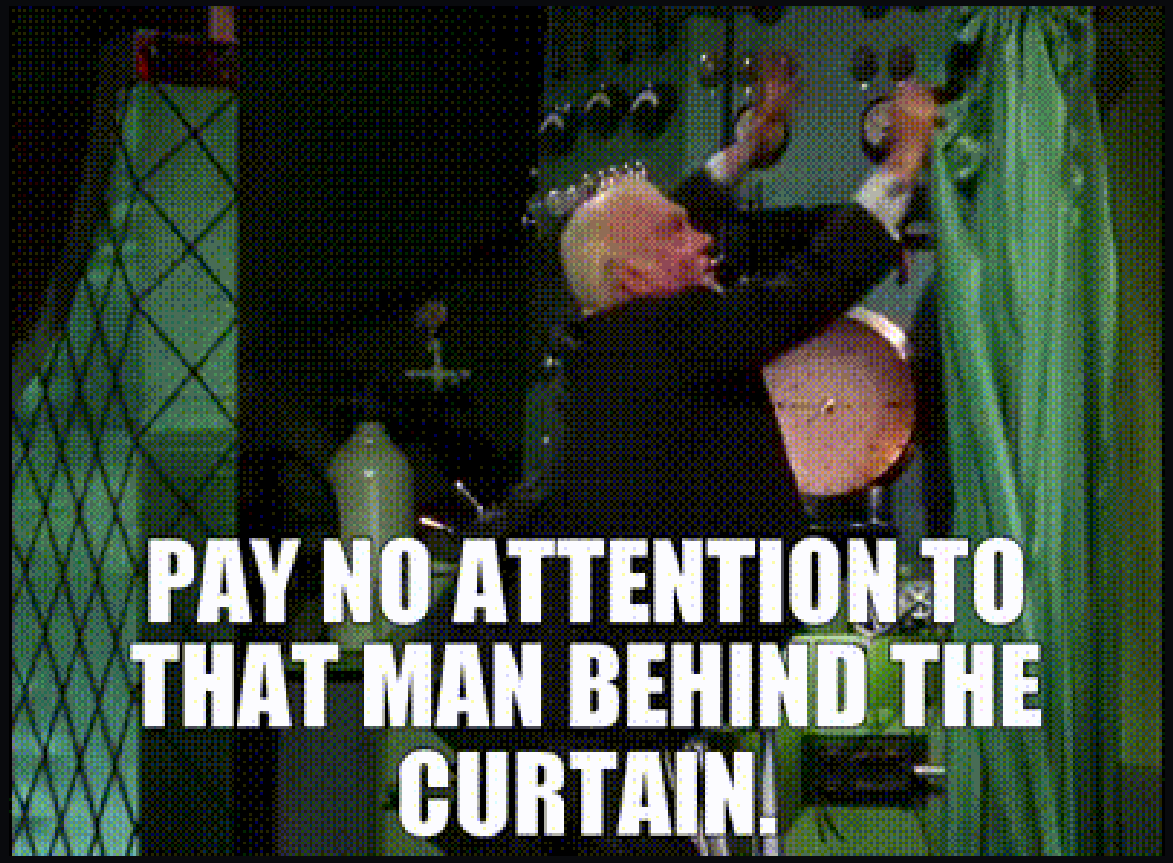
The AI Industry Today – Perception is Everything?

- Scalability
- Productivity
- Computational Power
- Time/Cost Efficiencies
- Automation
- Buzzwords galore
- Epic graphics

The AI Industry Today – Still in Kansas, Toto



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The AI Industry Today – Peeking Behind the Curtain

Data for Labelling

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The AI Industry Today – Peeking Behind the Curtain

Data for Labelling

Outsourced Labeling

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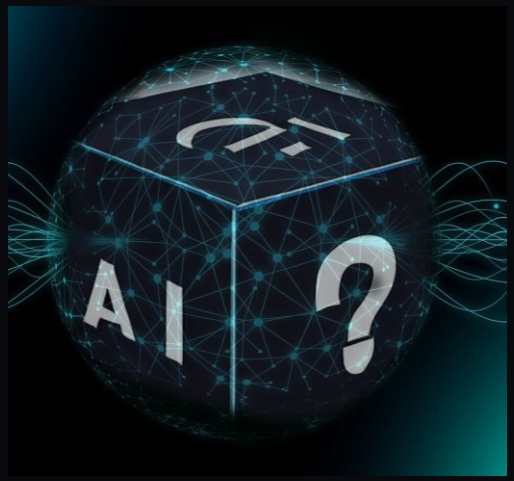
The AI Industry Today – Peeking Behind the Curtain

Data for Labelling

Outsourced Labeling

Black box / “AI”



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The AI Industry Today – The "Black box" of AI

Computer Vision

Machine Learning

"Proprietary/IP"

One Size Fits All…. Or One

LOTS of QA/QC

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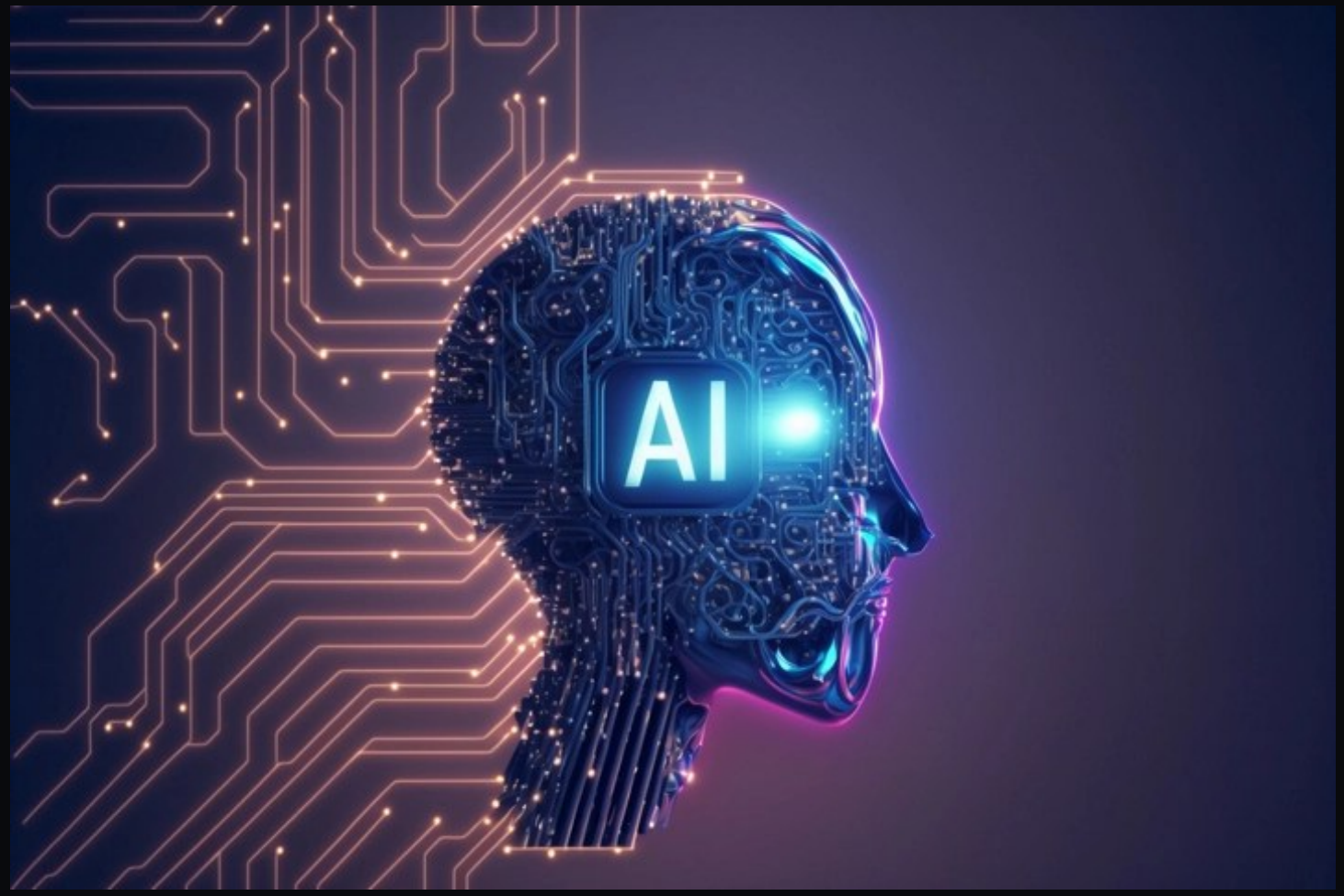
The AI Industry Today – Ta-da!



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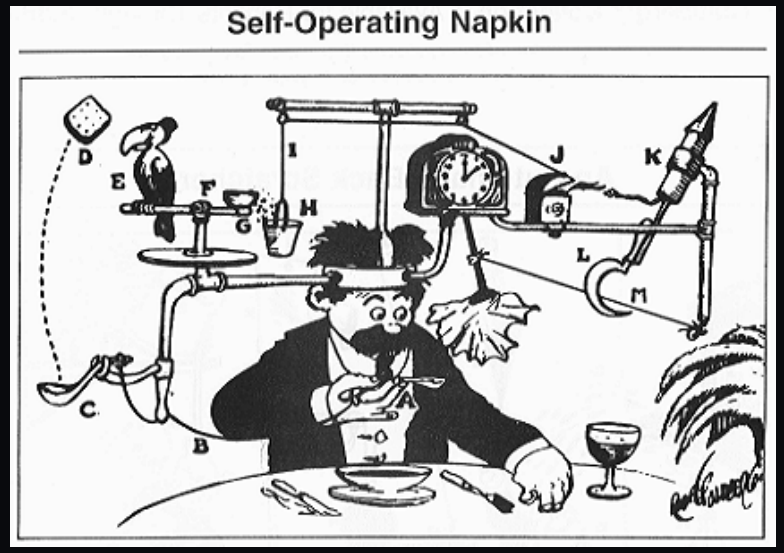
The AI Industry Today – Reality Check

- LOTS of hand labelling
- Laborious
- Expensive
- Requires coding/scripting
- Speed/Scale = Processing $
- Maintains reliance on vendors
- Still “Buy v Build”
- Heavy on the ”A”, lite on the “I”



Your Role Moving Forward

Your Role Moving Forward – Meet EITL

Your Role Moving Forward – Meet EITL

Expert-in-the-loop (EITL) machine learning is a collaborative approach that integrates human input and expertise into the lifecycle of machine learning (ML) and artificial intelligence systems

Garbage *in* Garbage **OUT**

Your Role Moving Forward – An Expert at the Helm

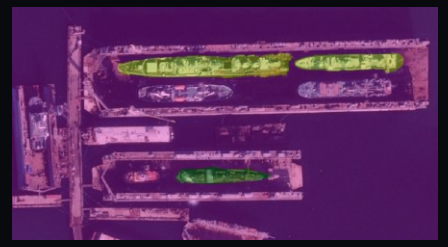
AI is…

- Only as good as the human inputs
- As intelligent as YOU make it
- A tool, not a replacement
- A mechanism for amplifying your skills & output
- A force multiplier for organizations
- An inevitable reality
- A friend, not an enemy

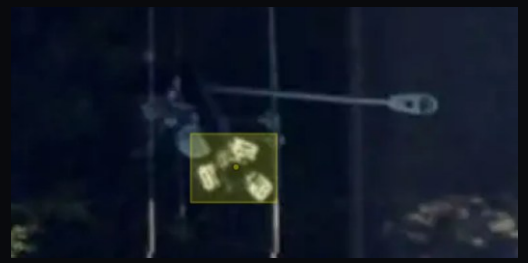
Industry Example – EITL in Action

Feature Extraction Examples

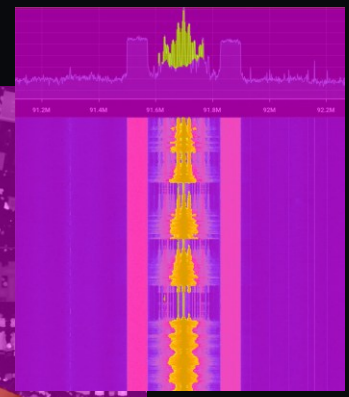
Satellite Imagery



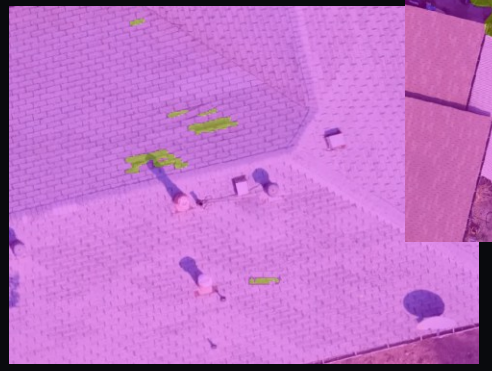
Aerial Imagery



Other Training Data



UAS



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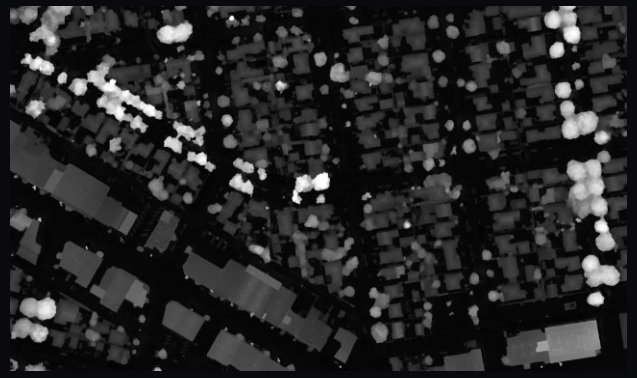
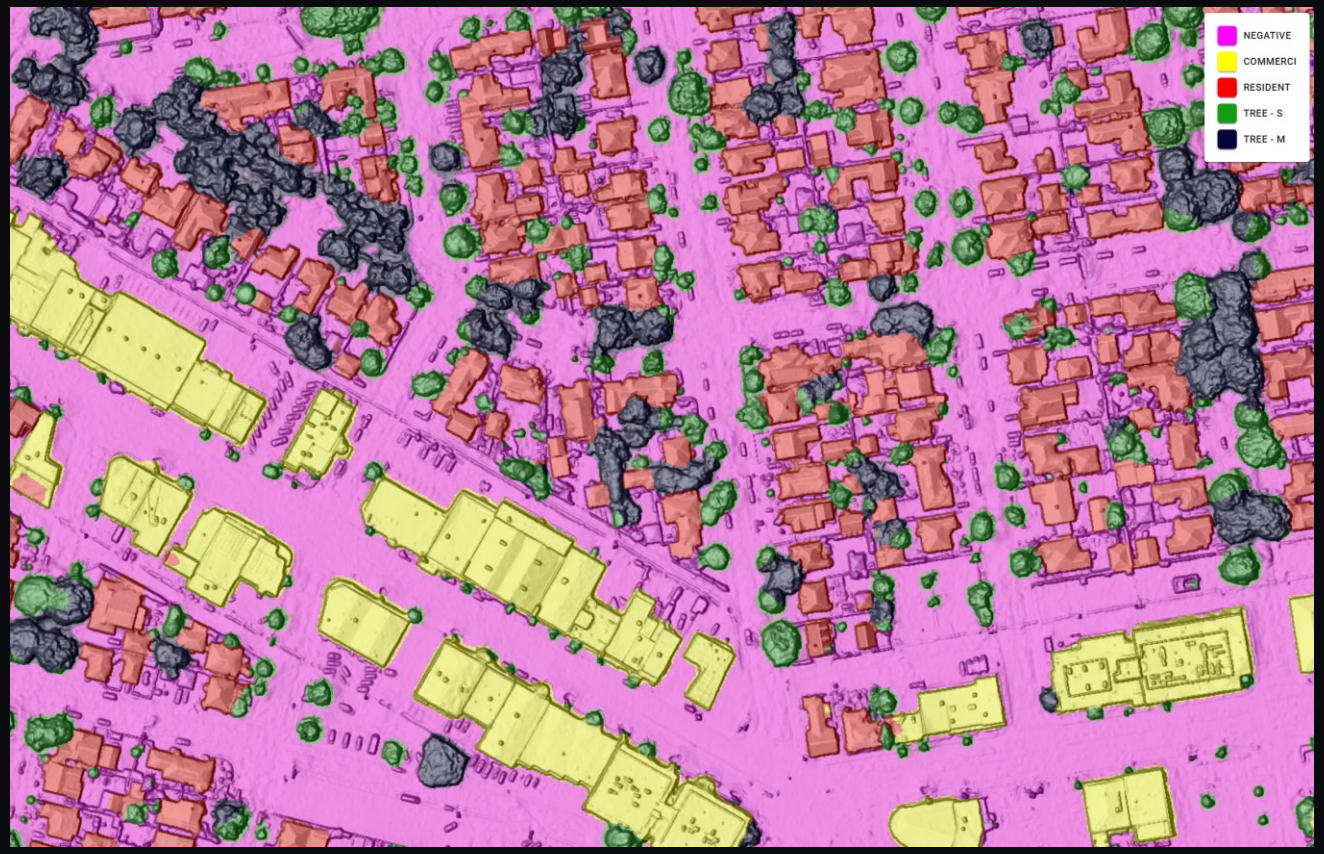
Advanced Feature Extraction using nDSM



Original nDSM with default settings

Hillshading applied to aid in labeling and feature segmentation



Aerial Imagery

Residential Building Commercial Building Tree (Multiple), Tree (Single)

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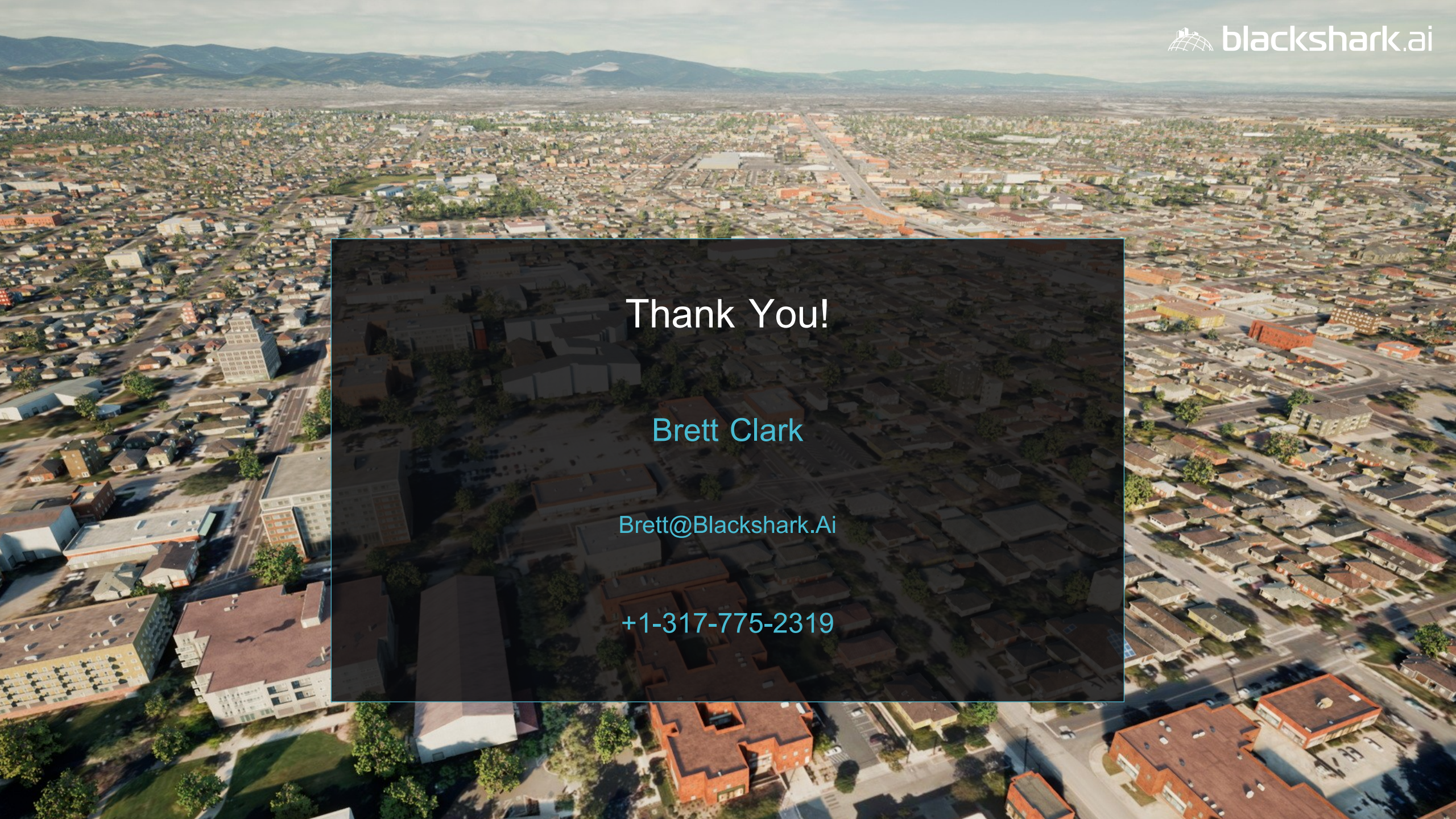
Conclusion – AI is Your Friend

- "Good data in, good data out" starts with YOU
- AI is an accelerant, not a replacement
- EITL AI merges the benefits of Buy & Build
- EITL AI simplifies the complexity of geo-int

AI shouldn't scare you, it should excite you!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Thank You!
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