Visual Intelligence

When Fintech Meets Physics - The InsurTech Revolution

● AI/ML Technical Documentation ● Production Systems ● Fintech Innovation ●

Technical Documentation Series
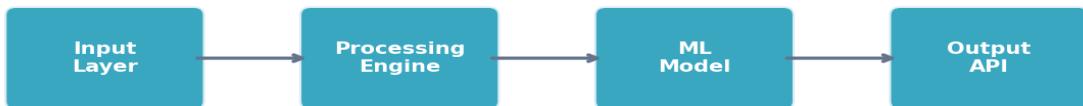
December 2024

Executive Summary

Insurance pricing has relied on proxy data for centuries. Visual AI and Computer Vision shatter this constraint - InsurTechs now 'see' the physical world, pricing risk and settling claims with physics-level precision impossible for legacy carriers.

3 seconds	**Pixel-Level**	**Satellite**
Claim Settlement	Damage Analysis	Real-Time Risk
Tractable	**Lemonade**	**Next Insurance**
AI Estimatics	AI Jim Claims	Digital Footprint

The Proxy Data Problem

Traditional insurers price car accidents by driver age/zip code, not the actual car. They price home insurance by neighborhood fire history, not the actual house. Visual AI eliminates this guesswork through Source Data.

Tractable: AI Estimatics Engine
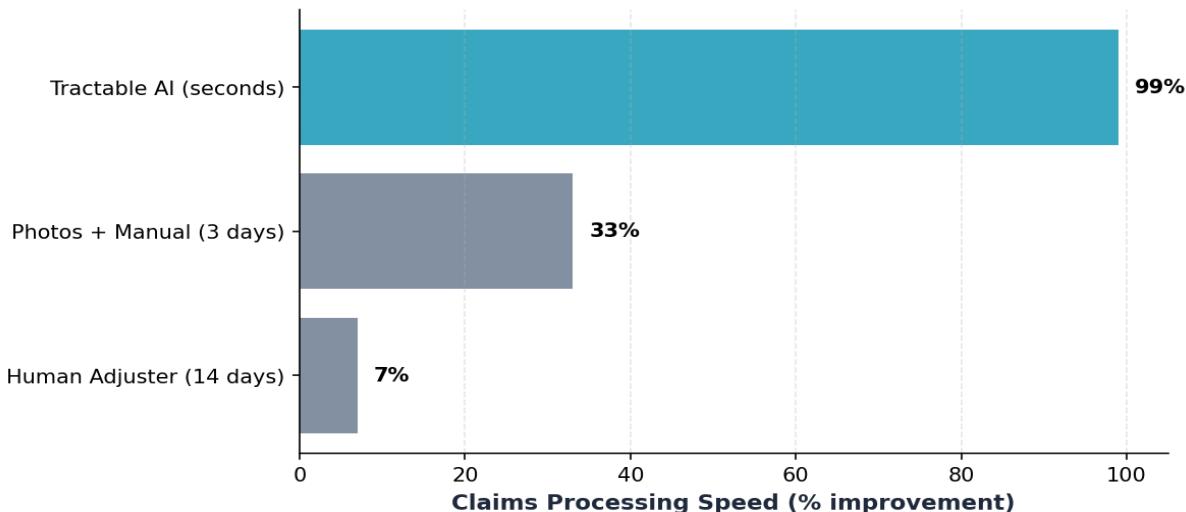
• **Visual Estimation Pipeline**

    • **Computer Vision:** Deep Learning trained on millions of collision images

    • **Pixel-by-Pixel Analysis:** Distinguish scratch, dent, tear damage types

- **Instant Triage:** Line-by-line repair estimates in seconds

- **Part Cross-Reference:** Automatic pricing and labor rate lookup

- **Key-to-Key Time:** Reduce time without car from weeks to minutes

• Green AI & Circular Economy

- **Salvage Optimization:** AI identifies undamaged parts in totaled vehicles

- **Recycling Marketplace:** Catalog parts for reuse supply chain

- **ESG + Economics:** AI drives both cost savings and sustainability

Claims Processing Speed (% improvement)

- Tractable AI (seconds): 99%
- Photos + Manual (3 days): 33%
- Human Adjuster (14 days): 7%

Tractable's Impact: AI Estimatics generates repair estimates in seconds, approving claims in minutes instead of weeks. Green AI identifies reusable parts in totaled vehicles, proving AI can drive unit economics AND ESG goals simultaneously.

Lemonade: The Autonomous Organization

• Watchtower - Satellite Risk Monitoring

- **Space-Based Underwriting:** Satellite imagery for real-time risk analysis

- **Precision Pricing:** Specific property vs broad zip code

- **Distance Measurement:** Proximity to brush (wildfire risk)

- **Roof Condition:** Computer vision assesses maintenance state

- **Real-Time Tracking:** Monitor wildfire fronts, block new policies in danger zones

• AI Jim & Forensic Claims

- **Conversational Bot:** Users record video explanations

- **Fraud Markers:** Analyzes micro-expressions, hesitation patterns

- **18 Anti-Fraud Algorithms:** Cross-reference against multiple systems

- **3-Second Settlement:** Instant payment for low-risk claims

- **Trust Mechanism:** Speed removes adversarial friction, prevents soft fraud
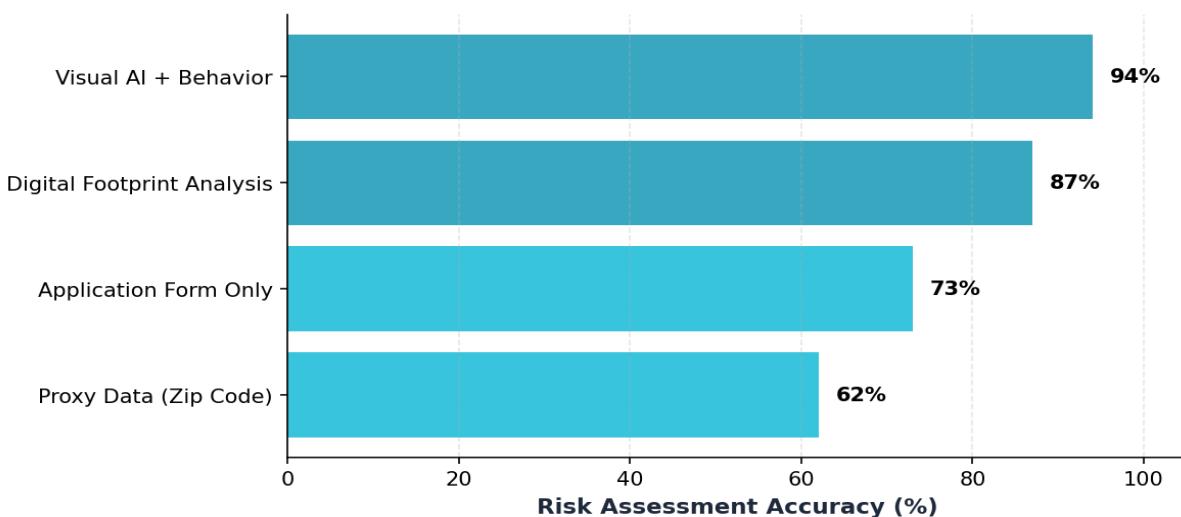

Next Insurance: Granular Intelligence for SMBs

• Digital Footprint Analysis

- **Web Scraping:** Yelp reviews, website, permits, social media photos

- **Risk Reclassification:** 'Handyman' with roofing reviews flagged for higher risk

- **Business Reality:** Restaurant doing 80% delivery adjusts liability coverage

- **Dynamic Policies:** Coverage fits actual risk profile, not category average

• Expanding the Market

- Insure 'too complex' businesses legacy carriers reject

- Granular understanding enables precision underwriting

- TAM expansion through better risk assessment

Risk Assessment Accuracy (%)

Category	Accuracy
Visual AI + Behavior	94%
Digital Footprint Analysis	87%
Application Form Only	73%
Proxy Data (Zip Code)	62%

End of Information Asymmetry: Computer Vision eliminates the gap between insurers and reality. By seeing the car, house, and digital footprint, AI platforms align price with risk more perfectly than ever before. Value lies in 'Visual Data Layer.'

The Visual Data Layer Advantage

- **Physics-Level Precision:** Actual damage assessment, not estimates

- **Real-Time Adaptation:** Satellite monitoring adjusts risk continuously

- **Market Expansion:** Insure previously 'uninsurable' risks

- **Customer Experience:** Instant claims vs weeks of negotiation

- **Sustainability:** AI-driven recycling reduces waste