From Reinforcement to Reliability: The Future of Construction Safety

A GPU-powered Steel Verification and Compliance Intelligence

Ensuring structural safety before concrete is poured, transforming manual inspection into real-time structural intelligence.

https://steelcheck.dev/

Vision & Team

Our Vision:To become the global intelligence layer ensuring structural safety and compliance in construction.

SteelCheck does not replace human inspectors; it elevates their capabilities by transforming traditional, manual inspections into real-time, data-driven intelligence, making every structure safer.

Leadership

Sheila Chelal: CEO & Founder

An Agricultural & Biosystems Engineer focused on AI-driven infrastructure safety and intelligent inspection systems, bringing a unique interdisciplinary perspective to construction technology.

Warren Charles: CTO

A seasoned Software & GPU systems architect specializing in cutting-edge computer vision and real-time AI inference, critical for high-performance structural verification.

Enosis Kamadi: Product Manager

An esteemed expert in construction compliance, building codes, and structural safety standards, crucial for ensuring SteelCheck's adherence to industry best practices.

The Hidden Crisis in Construction Safety: Construction Integrity Is Compromised Before Structures Rise

Widespread Specification Errors

- Incorrect rebar diameters and spacing lead to compromised structural integrity.
- Substituted steel grades without proper validation introduce unforeseen weaknesses.

Manual Inspection Limitations

- Human error and inconsistent quality checks are inherent flaws in current processes.
- Errors often discovered only after concrete placement, making rectification costly and difficult.

Safety & Structural Risk

- Unseen structural weaknesses can lead to premature failure of buildings and infrastructure.
- Increased risk of catastrophic collapse, posing grave danger to lives and assets.

Financial & Legal Exposure

- Costly rework, significant project delays, and budget overruns.
- Legal liability, substantial compliance penalties, and complex insurance disputes.

Bottom Line: Steel mis-verification is a silent risk embedded in global infrastructure, demanding an urgent, intelligent solution.

SteelCheck: The Structural Intelligence Platform

A GPU-powered compliance layer for steel verification

SteelCheck transforms traditional manual inspection into a dynamic, real-time structural intelligence process, ensuring precision and compliance from the ground up.

SteelVision

Leverages advanced GPU computer vision to detect rebar diameter, spacing, and steel profiles with unparalleled precision.

StructMatch

Automatically compares actual site installations against original engineering drawings and detailed BIM specifications.

Compliance Engine

Validates all steel installations against critical engineering standards and comprehensive safety codes, flagging discrepancies instantly.

EdgeInspect

Utilizes mobile and edge AI verification systems to enable instant, on-site inspection and feedback, even in remote locations.

Platform Impact: SteelCheck converts steel verification from manual inspection into real-time compliance intelligence, revolutionizing construction quality assurance.

Powered by GPU Intelligence

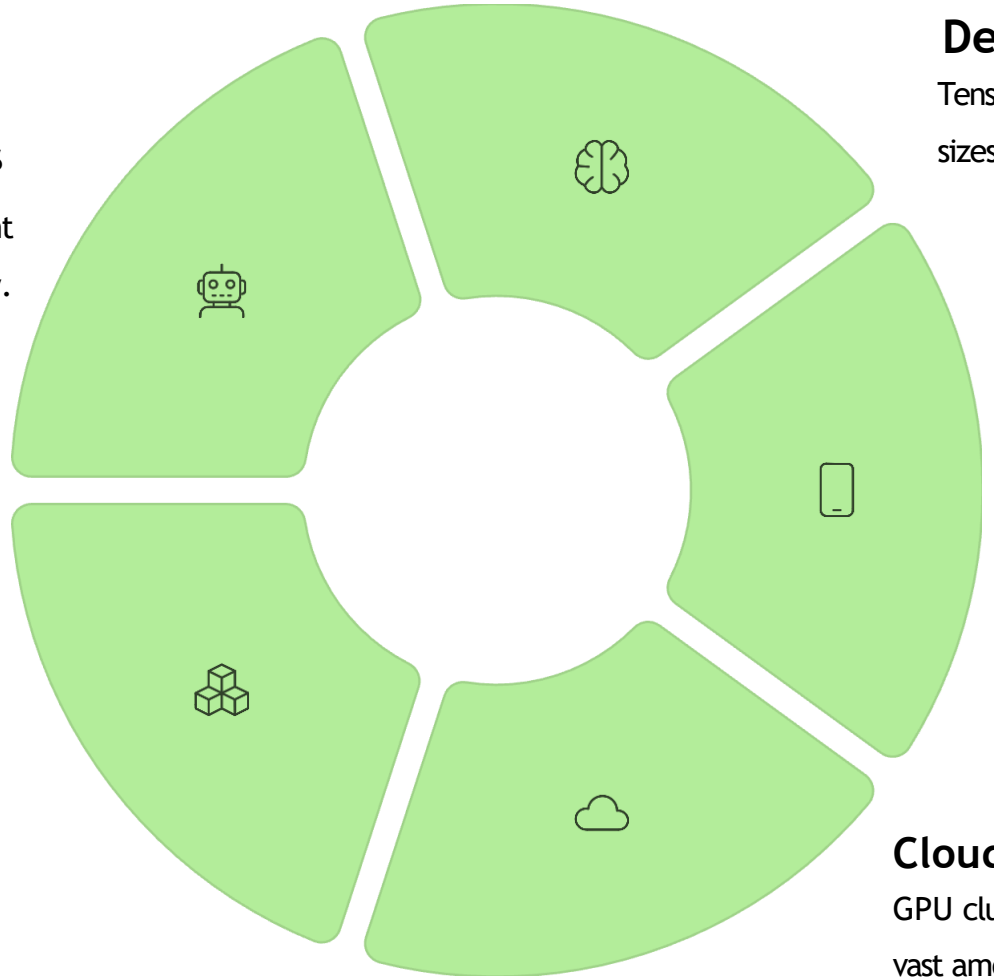
Building the world's first GPU-accelerated steel verification platform.

Deep Learning Precision

TensorRT-optimized models accurately identify rebar sizes and structural profiles, minimizing errors.

Computer Vision & Spatial Analysis

CUDA-accelerated detection and geometric measurement of steel layouts for unmatched accuracy.



Edge AI Inspection

NVIDIA Jetson integration enables offline, real-time verification directly on site, enhancing operational speed.

Spatial Compliance Analytics

GPU geometry engines validate spacing, alignment, and structural integrity, providing comprehensive compliance insights.

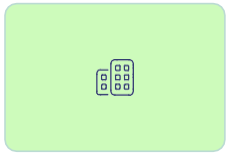
Cloud Training & Continuous Learning

GPU clusters continuously train and refine models using vast amounts of real-world construction data.

Architectural Priority: Our platform is engineered for unparalleled speed, accuracy, and real-time decision support, specifically designed for the demanding conditions of harsh field environments.

Why Now:The Industry Inflection Point

The convergence of safety urgency and technological readiness is creating an unprecedented opportunity.



Infrastructure Boom

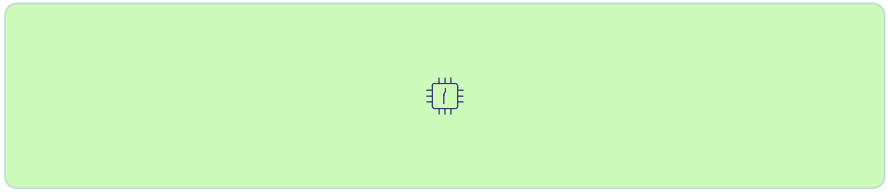
Global construction growth demands higher quality assurance, pushing the need for advanced verification systems.

Regulatory Pressure

Governments are increasing enforcement of building safety standards, making compliance critical and complex.

Labor & Skills Gap

A persistent shortage of experienced inspectors dramatically increases risk exposure on project sites.



Technology Readiness

Advances in GPU vision and edge AI now enable real-time, precise structural verification, previously impossible.

Market Reality

Construction remains one of the least digitized industries globally, despite its high-risk nature, presenting a vast opportunity for innovation.

The window is open: The construction industry urgently needs intelligent, automated solutions, moving beyond error-prone manual inspections.

Market Opportunity: Building Safer Infrastructure

SteelCheck operates at the intersection of safety compliance, infrastructure growth, and construction digitization.

Market Drivers

- → **$10+ Trillion Global Construction Industry**
  A massive and ever-growing market provides a fertile ground for disruption and innovation.
- → **Increasing Infrastructure Investments**
  Worldwide initiatives to upgrade and expand infrastructure necessitate more stringent safety protocols.
- → **Rising Compliance and Safety Enforcement**
  Governments and regulatory bodies are intensifying oversight, creating a critical demand for automated solutions.
- → **Growing Demand for Construction Automation**
  The industry is actively seeking technological advancements to improve efficiency, accuracy, and safety.

Target Segments

- Infrastructure & Public Works
- Commercial Construction Firms
- Engineering & Inspection Services
- Government Regulators
- Industrial & Energy Projects

Value Proposition

Reducing structural risk with SteelCheck not only saves millions per project in potential rework and liability but, most importantly, protects countless lives by preventing catastrophic failures.

Early Traction & Go-To-Market Strategy

Our phased approach to market penetration, focusing on high-impact sectors.

Initial Deployment Strategy

1 Pilot Use Cases

- Large infrastructure projects (bridges, tunnels).
- High-rise commercial developments with complex steel structures.
- Government compliance inspections to set new benchmarks.
- Quality assurance and structural audits for existing buildings.

2 Platform Readiness

- Intuitive mobile inspection workflows for on-site efficiency.
- Cloud dashboards providing real-time compliance reporting and analytics.
- API-ready for seamless integration with existing enterprise systems.

FUNDING

techstars_ Pre-Seed

Quantum Savanna VC Seed

CATERPILLAR VENTURES

AUTODESK CONSTRUCTION CLOUD

HubSpot for Startups

aws startups

Strategic Advantage: Early deployments generate critical training data, continuously improve AI models, and firmly establish SteelCheck as the essential compliance intelligence standard in the industry.