SAHASRAKSHA
TECHNOLOGY SOLUTIONS PVT. LTD.

COMPANY PROFILE
2026

VISION AI · EDGE-TO-CLOUD PLATFORM · AUTONOMOUS HARDWARE

Vision intelligence, from capture to decision.

Cameras and drones capture vast amounts of video, and most of it is never used. We turn it into counts, defects, safety alerts and decisions — in real time, at the edge, even where connectivity is poor.



OUR AUTONOMOUS UAV PROTOTYPE · FIELD FLIGHT TEST

SEE EVERYTHING.

UNDERSTAND INSTANTLY.

ACT DECISIVELY.

A BITS Pilani faculty start-up
Incubated at the Technology Business Incubator (TBI)
BITS Pilani, Hyderabad Campus

Sahasraksha (Sanskrit)
"the thousand-eyed"

ABOUT SAHASRAKSHA

Turning vision into decisions — one partner, end to end

Sahasraksha Technology Solutions is a deep-tech start-up founded by BITS Pilani faculty and incubated at the Technology Business Incubator, BITS Pilani Hyderabad Campus. We build industry-trained vision-AI models that count, inspect, detect and alert — and the platform and hardware that run them.

We design, build, integrate, customise and support the complete system: drones and edge devices, a 4-tier edge-to-cloud AI platform, and sector-specific models. Customers buy outcomes, not components — with one accountable partner from site visit to scale-up.

AT A GLANCE

Status as of September 2026

TRL 5
AI platform validated
Real drone footage processed edge → cloud

4
Live solution demos
Running on NVIDIA Jetson edge hardware

9
AI solutions in portfolio
Across six target sectors

UAV
Autonomous drone flying
Crash-tolerant, GPS-denied UAV in build

What we build

01
Vision AI solutions
Industry-trained models that count, inspect, detect and alert.

02
4-tier AI platform
Runs those models where the data is — far edge, edge, fog and cloud.

03
Autonomous hardware
Drones, rovers and edge devices that capture the data.

Why cloud-only falls short in industry

Edge computing market: **$168B → $249B**, 2025–2030
Source: MarketsandMarkets, Aug 2025

Latency. Cloud round-trips of 100–500 ms are too slow for real-time control.

Bandwidth. A single factory can generate 1 TB+ of data a day — too much to ship upstream.

Security. Centralised cloud is a single point of failure and a privacy risk.

Reliability. Lost connectivity should never stop a time-critical operation.

Cost. Paying to process non-critical data in the cloud adds up fast.

Lock-in. Closed, proprietary systems make integration slow and costly.

SECTORS WE SERVE

Manufacturing | Construction & Infrastructure | Energy & Utilities | Agriculture | Defence & Security | Education & Enterprise

SYSTEM ARCHITECTURE

The 4-tier integrated intelligence platform

From the far edge of the field to the enterprise cloud — one data pipeline. Each AI model runs at the tier where it makes most sense, and every tier keeps working if the link above it drops.

CAPTURE & INFER →	AGGREGATE & ALERT →	ANALYSE & LEARN →	GOVERN & DECIDE
TIER 01	TIER 02	TIER 03	TIER 04
Far edge	**Edge**	**Fog**	**Cloud**
Drones & cameras	**Rugged edge node**	**On-premise AI server**	**Enterprise cloud**
Own UAV / UGV with HD, thermal or LiDAR payloads; fixed industrial IP and PTZ cameras.	The operator's field command post: aggregates feeds, runs heavier models, raises local alerts.	The site's intelligence hub: plant-wide analytics, dashboards and retraining on local data.	Multi-site benchmarking, executive dashboards and model distribution back to the edge.
On-board AI **NVIDIA Jetson Orin Nano / NX** Inference **<50 ms, real time** Comms **5G / Wi-Fi 6 / LTE**	Hardware **Rugged laptop (MIL-SPEC option)** GPU **NVIDIA RTX / Quadro** Storage **NVMe SSD local buffer**	CPU **Intel Xeon / AMD EPYC** GPU **NVIDIA A100 / RTX 4090** Memory **128–512 GB ECC; NAS / RAID**	Platform **AWS / Azure** Access **Web + mobile app** Security **TLS 1.3, end-to-end encryption**

Reference hardware shown for each tier; configurations are sized to each site.

Bidirectional data flow

Insights flow up; retrained models are pushed from cloud to edge automatically.

Offline resilient

Each tier runs independently — lose the cloud and the edge keeps counting and alerting.

Open, no lock-in

Kubernetes and open-source foundation; standard protocols throughout.

Integrates with what you run

Video & plant: RTSP, ONVIF, SCADA, ERP and MES connectors

APIs: REST, MQTT, gRPC and WebSocket

Enterprise stacks: designed for SAP, Oracle, Siemens and Rockwell

Bandwidth: edge filtering cuts cloud traffic by up to 95%

Start small, scale by tier

Edge-only: far edge + edge, for offline, low-bandwidth or security-sensitive sites

Cloud-hybrid: fog + cloud on your existing cameras — the fastest path for brownfield sites

Full 4-tier: drone to cloud, for large or multi-site operations

SOLUTION PORTFOLIO

One platform, many solutions

Each solution is a trained model plus a workflow, deployed at the right tier. A new use case needs a new AI model — not new infrastructure.

SOLUTION	WHAT IT DOES	READINESS (TRL 1–9)
Sheet counting & crack detection	Counts asbestos / roofing sheets and flags cracks from a live 1080p feed; Dockerised REST API on Jetson.	**TRL 4** · Working prototype
Face-recognition attendance	Contactless attendance on Jetson GPU, written straight to the ERP — for campuses and workplaces.	**TRL 4** · Working prototype
WellNest wellness monitoring	Consent-based wellness score from meal, presence and emotion signals; staff review every flag. Campuses first, then corporates.	**TRL 4** · Working prototype
PPE compliance monitoring	Detects missing hard-hats, masks and safety vests at work sites, with real-time alerts and evidence.	**TRL 4** · Working prototype
Perimeter & intrusion alerts	Virtual geofences on drone or fixed-camera views; instant alerts on entry into restricted zones.	**TRL 3** · Proof of concept
Battery counting & visual QC	Classifies batteries by type (2W, car, truck), counts them on the line and at dispatch, flags visible defects.	**TRL 3** · Proof of concept
Construction progress tracking	Periodic drone surveys compared over time and against plan to measure progress and flag delays.	**TRL 2** · Concept
Crop growth & health	Drone imagery analysed for growth stage, stress, pests and disease — for timely, targeted action.	**TRL 2** · Concept · pilot under way
Campus & estate inspection	Scheduled drone patrols of roofs, facades, grounds and boundaries to spot damage and encroachment.	**TRL 2** · Concept

TRL = Technology Readiness Level: 2 concept · 3 proof of concept · 4 validated in lab · 5 validated in relevant environment · 6–7 demonstrated in operational setting.

Application areas we are building towards

Manufacturing

Defect & crack detection · dimensional checks · foreign objects · packaging & labels · unit counting · yard surveys · dispatch verification · thermal hotspots

Defence & security

Aerial ISR · border & perimeter patrol · target identification & tracking — Army, Air Force, Navy

Agriculture

Crop growth & health · pest, disease & weed detection · plant counts, biomass & yield estimates

Infrastructure

Railway track inspection · telecom tower inspection · HV transmission line inspection — without climbs or shutdowns

SOLUTIONS IN ACTION

Real outputs, real hardware

Frames from our own working prototypes. Every one runs on the same Sahasraksha edge-to-cloud platform.

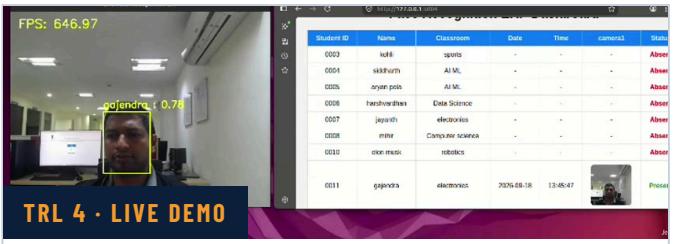


TRL 4 · LIVE DEMO

Sheet counting & crack detection

Problem. Manual tallies of stacked roofing sheets are slow and error-prone, and cracked sheets slip through.

What it does. Counts sheets and flags cracks from a camera feed, live on Jetson at the edge.

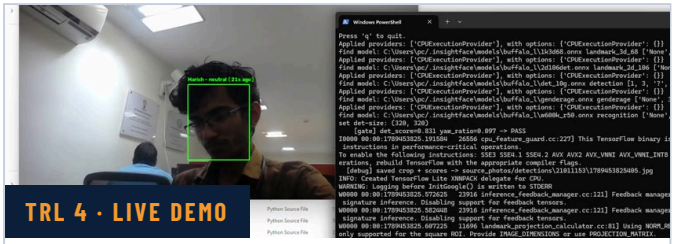


TRL 4 · LIVE DEMO

Face-recognition attendance

Problem. Roll calls eat into class and shift time, and proxy attendance is hard to catch.

What it does. Recognises each person on Jetson and marks them Present in the ERP — contactless.



TRL 4 · LIVE DEMO

WellNest wellness monitoring

Problem. Early signs that a student is struggling are easy to miss in a large campus.

What it does. Consent-based wellness score from meal, presence and emotion signals; staff review every flag.



TRL 4 · LIVE DEMO

PPE compliance monitoring

Problem. Safety officers cannot watch every worker on a busy site, every hour.

What it does. Flags missing hard-hats, masks and safety vests in real time, with image evidence.



TRL 3 · PROOF OF CONCEPT

Battery counting & visual QC

Problem. Counting and sorting batteries of many types by hand at the line and at dispatch.

What it does. Detects batteries and classifies them by size — the basis for line counts and defect checks.



DATA CAPTURED · SEPT 2026

Field footage: paddy & power lines

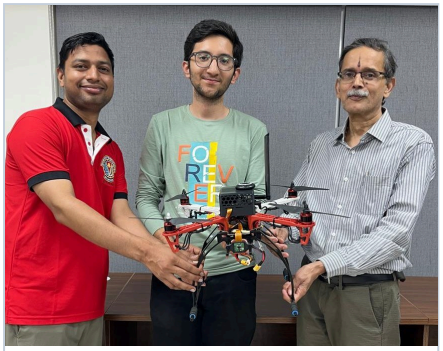
Problem. Crops and transmission towers span large areas that are slow to inspect on foot.

What it does. Our own drone footage, ready for labelling to train crop-health and line-inspection models.

TACTICAL UAV PROGRAMME

A crash-tolerant, autonomous UAV for GPS-denied environments

Built for high-risk terrain such as border zones, where GPS is jammed or absent and crashes are likely. Three development pillars converge into one virtually indestructible platform, running on our 4-tier edge-to-cloud stack.



PILLAR 1 · PROVEN, FLYING TODAY

Functional baseline platform

Autonomous GPS waypoint missions flown in field tests.

NVIDIA Jetson Orin Nano for onboard AI, linked into our edge-to-cloud stack.

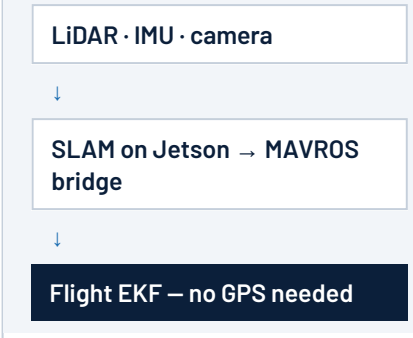


PILLAR 2 · DEMONSTRATOR BUILT

Tensegrity airframe

Icosahedron of rods and cables spreads impact loads; drop-tested — absorbs crash energy and rebounds.

Targets: <1.2 kg · 5–10 m/s impacts · self-right in <10 s.

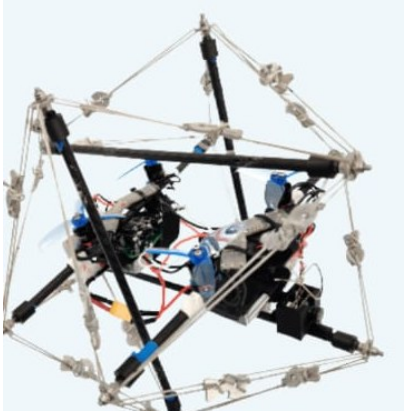


PILLAR 3 · WORK IN PROGRESS

LiDAR-SLAM navigation

Pipeline designed: sensors fused on Jetson; the SLAM pose replaces GPS in the flight controller.

Next: bench-test SLAM, then contained indoor flights.



THE PLAN AHEAD

Converge the three pillars into one tactical UAV

1. **Integrate** — fit the flight stack and Jetson into the tensegrity frame, with self-righting control.
2. **Navigate** — complete the LiDAR-SLAM stack and fly it onboard for fully GPS-free navigation.
3. **Field-prove** — crash-and-recover trials in GPS-denied, border-type terrain with defence users.

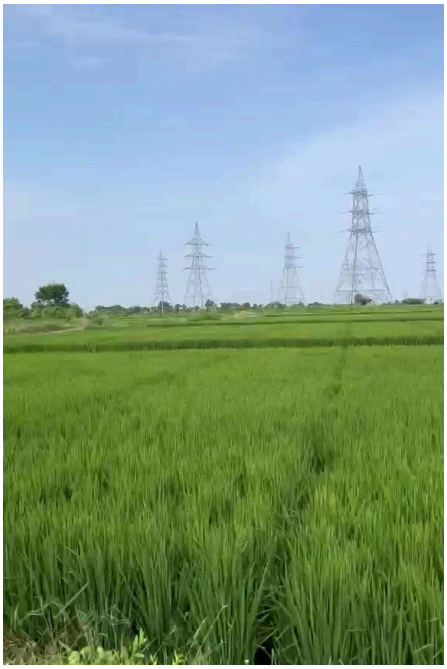
Render shows the target configuration.

Defence & security missions

Surveillance and reconnaissance, border and perimeter patrol, and target identification and tracking — for Army, Air Force and Navy.

Industrial & civil missions

Inspection of plants, tunnels and pipelines, indoor mapping and site surveys — wherever GPS is weak and crashes are costly.



Paddy fields · our field footage, 19 Sept 2026

PILOT FOCUS

Agriculture: crop growth & health

Drone surveys and AI models on our platform — from field footage to farm-level decisions. Drone capture at the far edge, pre-processing on site, analytics and dashboards in the cloud.

Growth-stage tracking
Field-by-field crop stage over the season

Stress & nutrient zones
Maps of weak or yellowing patches

Pest & disease warning
Alerts before damage spreads

Plant count & yield
Better harvest and logistics planning

Sept 2026 ✓	Q4 2026	Q1 2027	Kharif 2027
Field footage captured	Partner & labelled dataset	Models validated (TRL 4)	Season-long pilot (TRL 5–6)

Success measured against agronomist scouting: accuracy, acres per flight, warning lead time, yield-estimate error.

How we engage

1 · Discover
Site visit and use-case scoping

2 · Prove
30-day proof of concept on your data

3 · Pilot
Live pilot at your site

4 · Scale
Roll-out across sites

5 · Sustain
Support, updates, new models

Installation and on-site commissioning · remote monitoring and model updates · annual maintenance plans · 24/7 support options.

Roadmap: from proof of concept to scale

JAN – OCT 2026

1 · Proof of concept

SUBSTANTIALLY COMPLETE

4-tier prototype integrated; platform validated at TRL 5; UAV flying waypoint missions; four solutions live on edge hardware; tensegrity frame drop-tested.

NOV 2026 – MAY 2027

2 · Pilots & beta

WE ARE HERE

Pilots with 3–5 design partners; agriculture pilot; feature-complete platform beta; GPS-denied flight; contract manufacturing partner.

JUN 2027 – MAY 2028

3 · Production scale

PLANNED

Software v1.0; CE, FCC and UL certification; tactical UAV trials with defence users; solution catalogue and channel partners.

JUN 2028 ONWARDS

4 · Future roadmap

VISION

Custom FPGA / ASIC edge silicon; 5G-integrated devices; autonomous multi-drone orchestration.

WHY SAHASRAKSHA

End to end
We own the whole chain — capture hardware, edge AI, platform and models.

Open, no lock-in
Kubernetes and open-source foundation, standard protocols.

Own far-edge hardware
Drones and edge devices built in-house with onboard Jetson AI.

Vertical focus
Models trained on your data for your sector and conditions.

Cost-performance
Edge filtering cuts cloud bandwidth by up to 95%.

Modular
Start with one tier; scale across all four as needs grow.

CO-FOUNDERS

Prof. Krishnamurthy Bindumadhavan

Professor and Dean, Career Advancement and Practice School (CAPS), BITS Pilani. 25+ years across banking, finance, analytics and technology; former GM, Risk Operations APAC, Capital One; 3 US patents. Built CERI and the AI Lab for Education Innovation (IMC Gold Award 2025; VC Award for Innovation in Teaching 2026).

Mr. Keshava Rangarajan

AI/ML technology leader with 40+ patents in analytics, optimisation, AI and blockchain. Former CTO at IBM USA, where he led a cloud transition that delivered three consecutive years of 30% margin growth. Deep track record in advanced R&D and product development.

BOARD OF ADVISORS

Dr. Sreerama Murthy — PhD in Data Science, Johns Hopkins; founder and CEO, Quadratyx.

Dr. Vidyashankar G. S. — management consultant and data scientist; performance management and enterprise architecture.

Mr. Lakshminarayana Kurella — digital transformation leader in oil & gas, utilities and finance.

ENGINEERING TEAM

Gajendra Sharma · ME Electronics, BITS Pilani, Goa Campus

Harish Sateesh · BE Computer Science, Anna University, Chennai

STUDENT INTERNS (BITS PILANI)

Ruthvik Reddy Thudi · BE Mechanical, Hyderabad Campus

Harshavardhan Marmamula · BE Mechanical, Hyderabad Campus

REQUEST A DEMO

See what our AI finds in your own footage.

We will run a live demonstration on your camera feeds or drone footage, then a 30-day proof of concept at your site — before you commit.

CONTACT

Prof. Krishnamurthy Bindumadhavan
Co-founder

EMAIL · PHONE · WEB

info@sahasraksha.in
+91 99662 04390
sahasraksha.in

ADDRESS

Sahasraksha Technology Solutions Pvt. Ltd.
Technology Business Incubator (TBI)
BITS Pilani, Hyderabad Campus
Jawahar Nagar, Shameerpet
Hyderabad 500 078

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