Sovereign AI: The Architecture of Indian Payments

BharatGen, FSS, and the path to Atmanirbhar Bharat 2047

BharatGen
GenAI for Bharat, by Bharat

Insights from Prof. Ganesh Ramakrishnan, IIT Bombay & Principal Investigator, BharatGen.

540 Million Lives. One Digital Economy.

540M+
citizens onboarded

$19 Billion
channeled through Gift City

UPI:
The Global Standard

A scientific challenge requiring massive computational resilience.

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The Imperative: Avoiding Data Colonization

The Risk: Reliance on foreign AI models invites high costs and **sovereign data loss**.

The Mandate: AI that bows to no foreign tech overlord.

The Goal: Ethical processing of **billions of transactions** strictly within Indian borders.
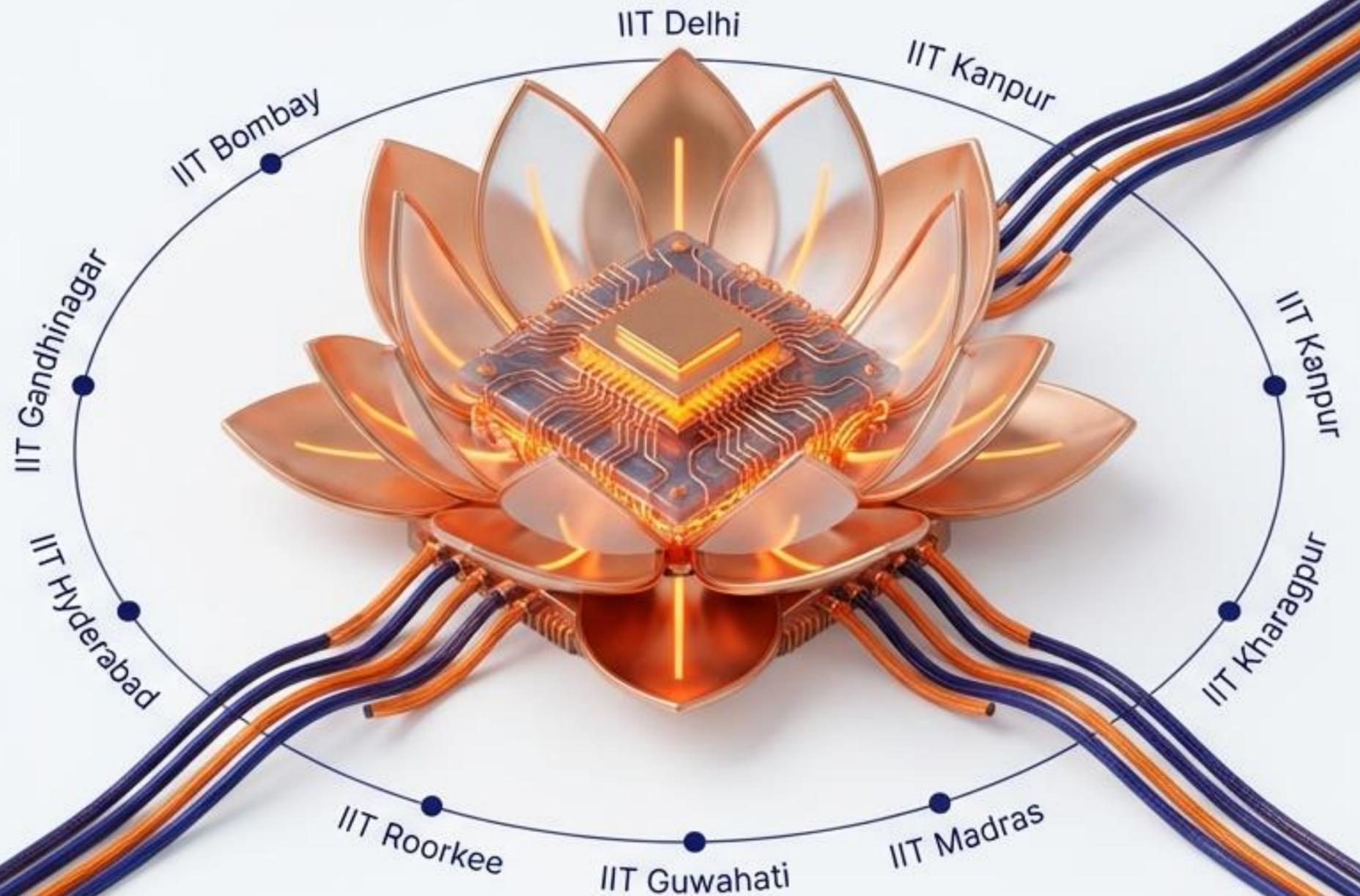
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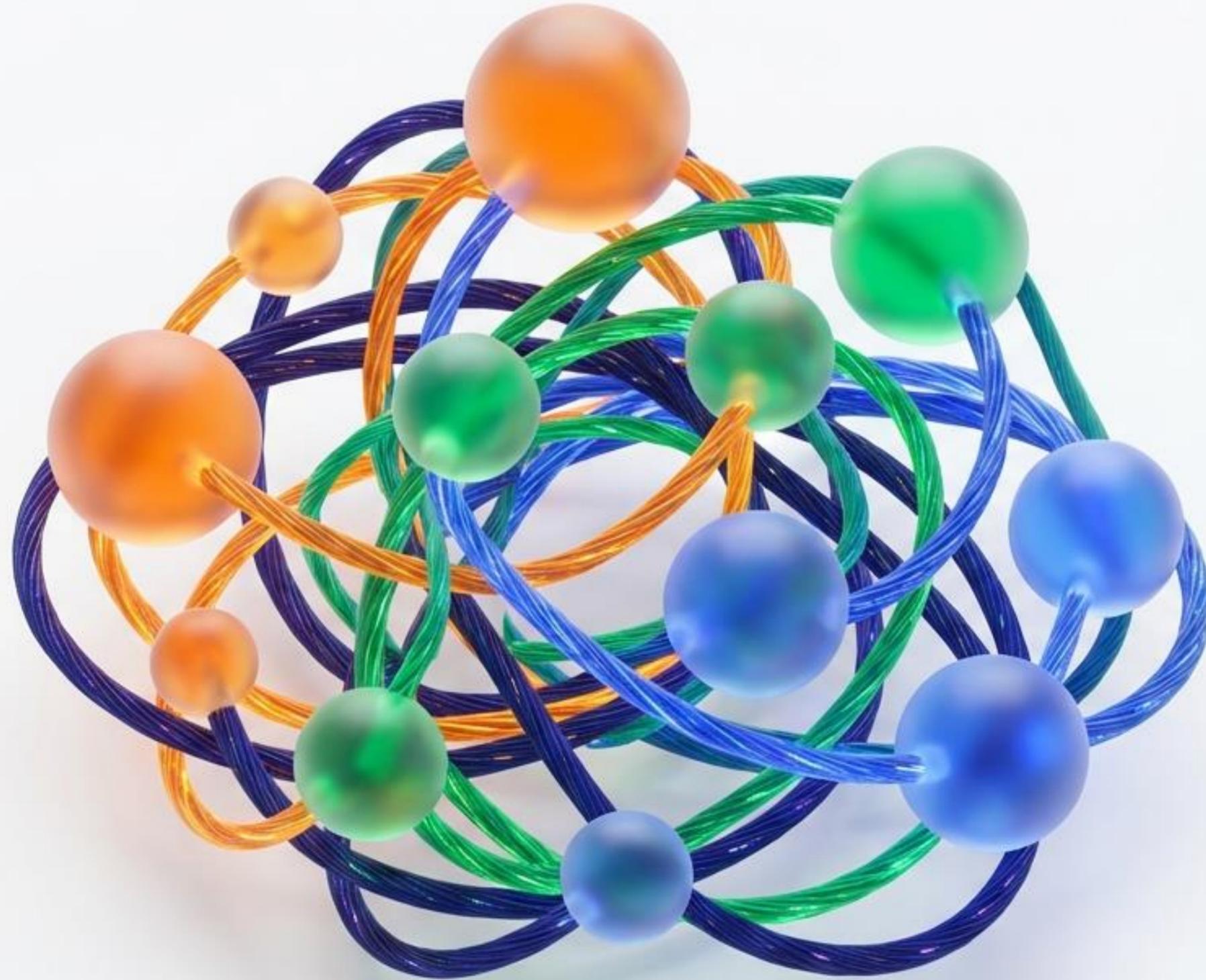
BharatGen: The Engine of Independence

Consortium: 9 IITs, Ministry-backed

Force: 50+ Engineers, 100 Researchers

Infrastructure: Homegrown GPUs, zero foreign cloud dependency
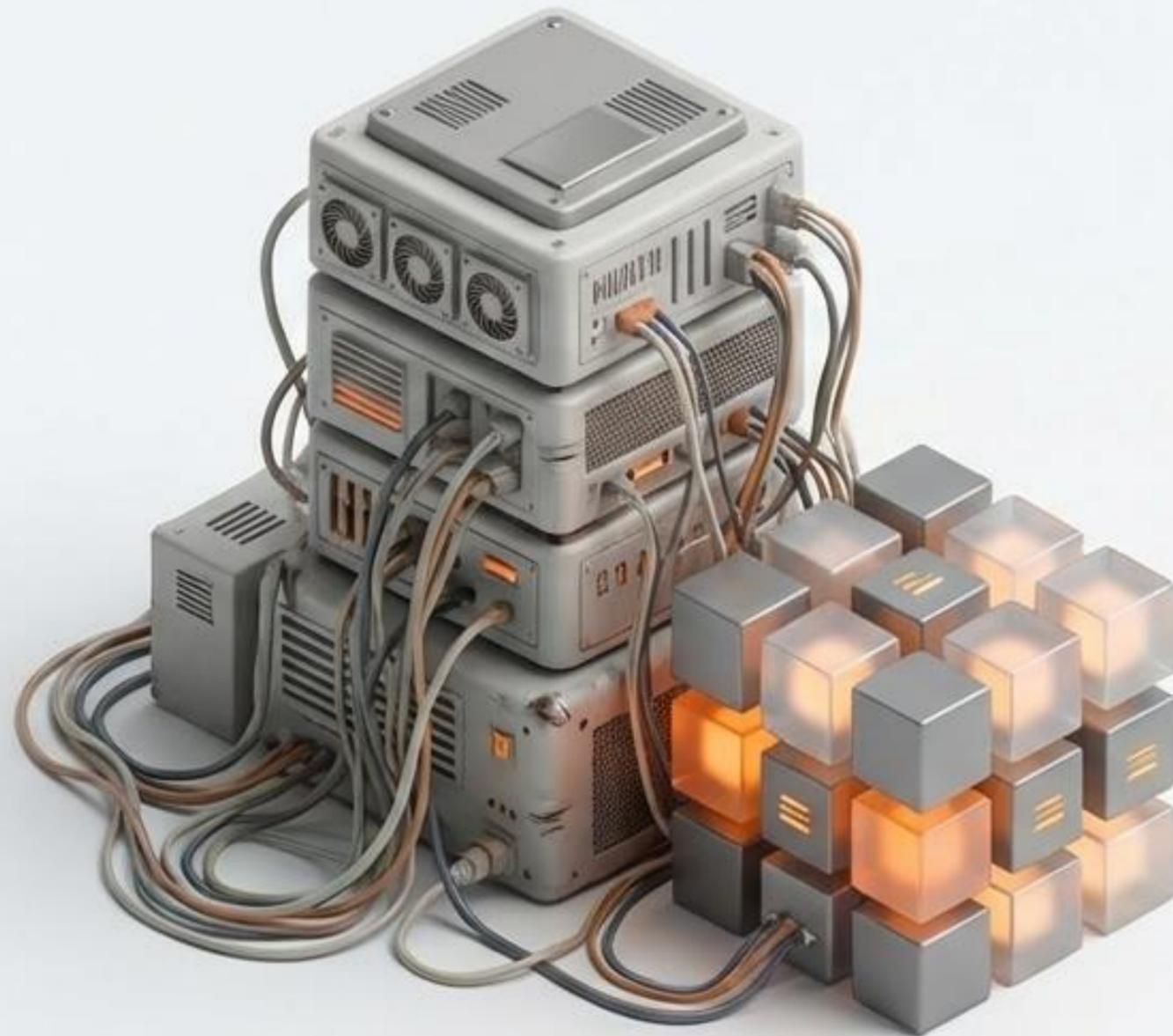
Mission: The Generative AI backbone for India

IIT Delhi

IIT Kanpur

IIT Bombay

IIT Gandhinagar

IIT Kanpur

IIT Hyderabad

IIT Kharagpur

IIT Roorkee

IIT Guwahati

IIT Madras

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Fluent in 11 Indic Languages

- **Multimodal:** Seamless Text, Speech, and Vision integration.

- **Cross-Pollination:** Cross-Pollination: Identifying shared linguistic patterns to improve accuracy across dialects.

- **Context:** Cultural attunement for rural and urban India.

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Frugality is the Mantra

Traditional LLMs

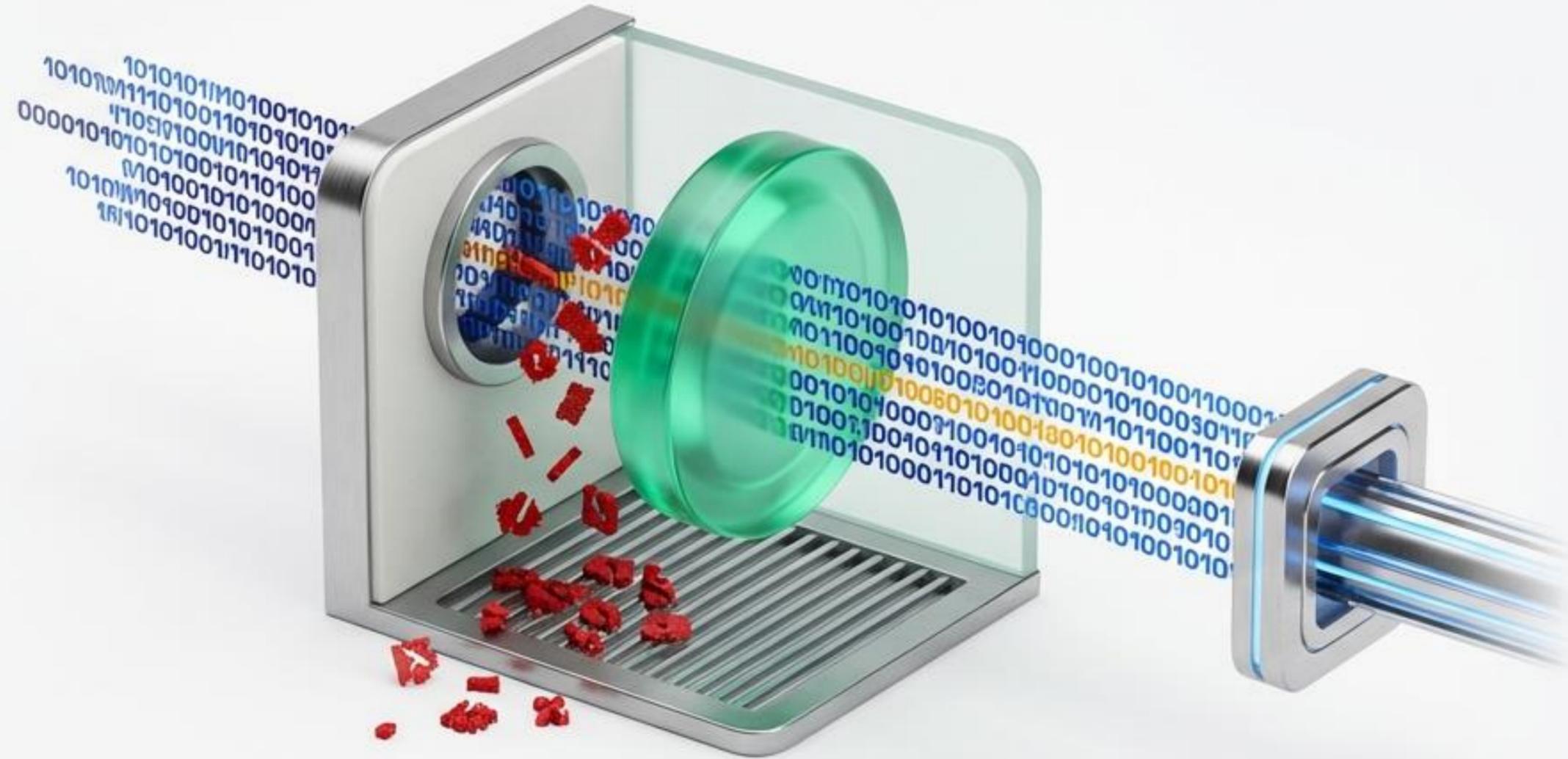## BharatGen

Efficiency: Sidestepping the computational bloat of Western giants.

Current State: **17 Billion** Parameters.

Future Scale: Scaling to **1 Trillion Parameters** via **₹1,000Cr+** challenge grant.

Seed Funding: **₹235Cr** initial investment.

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Scientific Editorial

Governance from Day One

Trust-by-Design
ISO 42001 aligned

Bias Checks
Rigorous fairness testing

Explainability
The AI explains every decline

Human-in-the-Loop
Protocols to eliminate hallucinations

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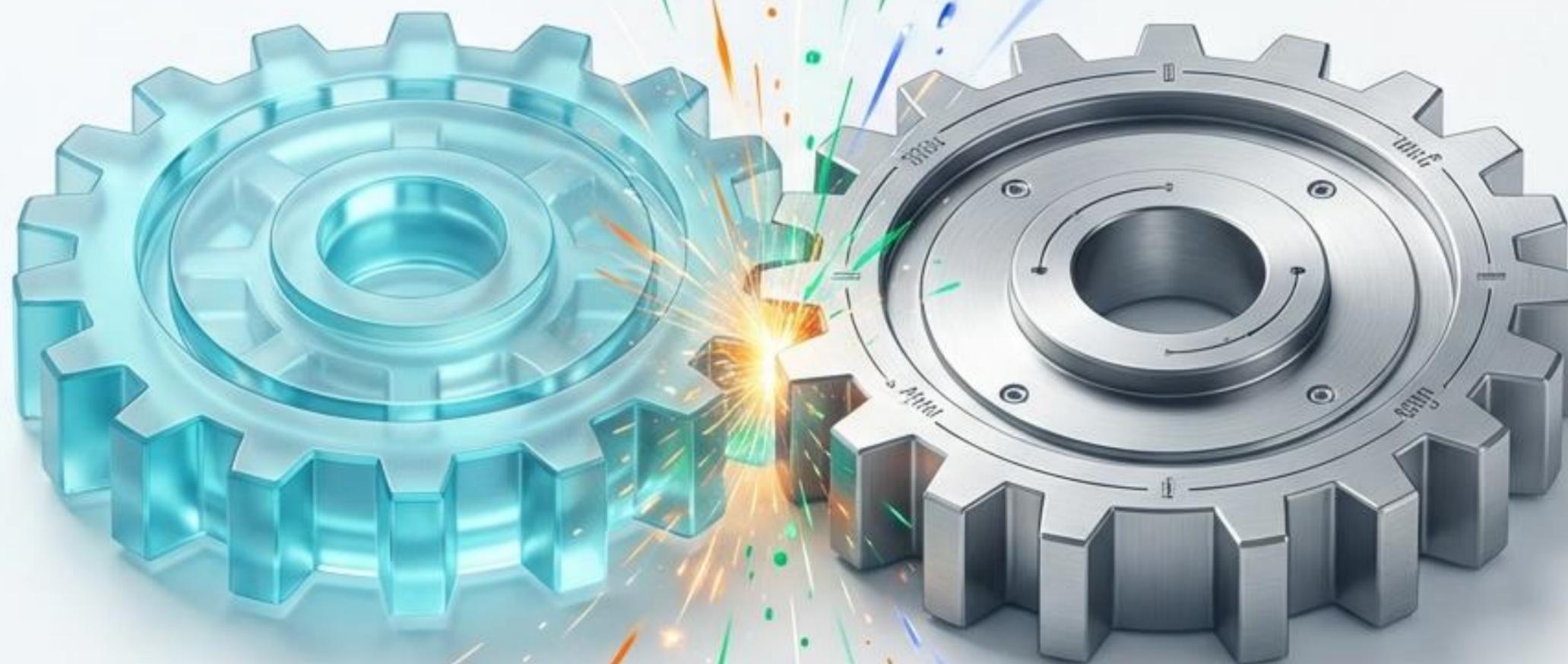
Where Science Meets Scale

The Catalyst: Financial Software and Systems (FSS).

The Role: Turning BharatGen models into banking products.

Validation: FSS holds India's first ISO 42001 certification in payments.
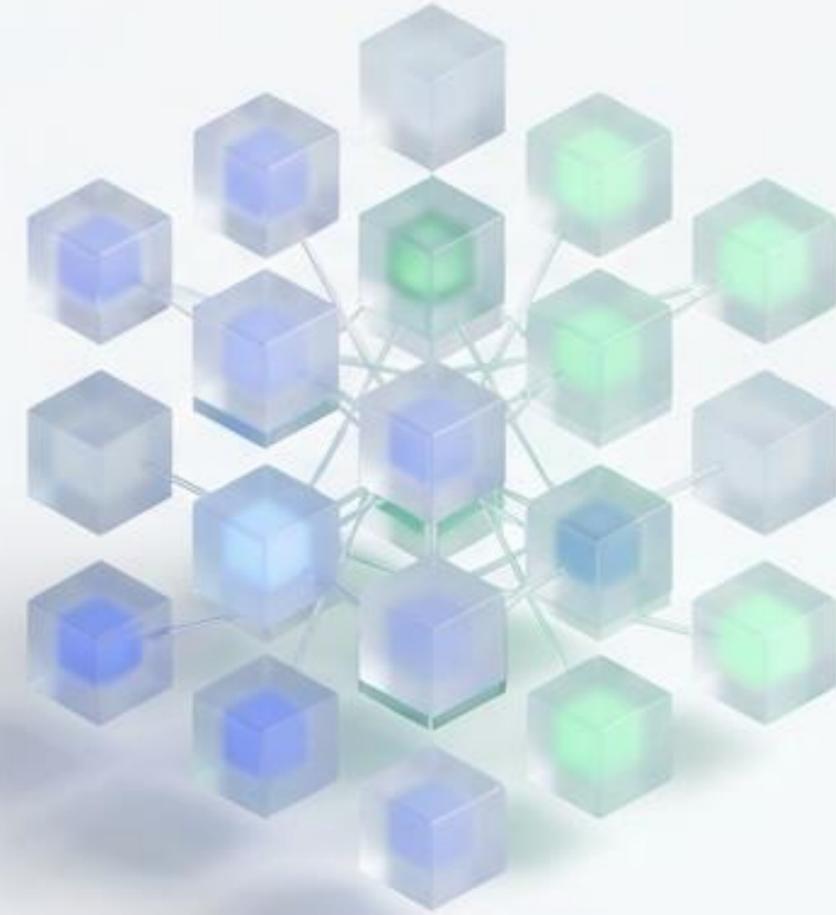
Academia (BharatGen)

Industry (FSS)

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Blaze: Ditching the Legacies

Old Monoliths

Microservices

- **Architecture:** Kubernetes-Native for infinite scalability.
- **Rule Engines:** Dynamic flows for complex banking.
- **Adoption:** Powering 10+ major banks.

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Cosmos AI: The Watchtower

Ingestion:
450+ data hooks.

Drift Monitoring:
Auto-detection of accuracy loss.

Data Drift

Productivity

Orchestration:
AI agents with human fallbacks.

Impact: 30% productivity leap in chargebacks.

BharatGen
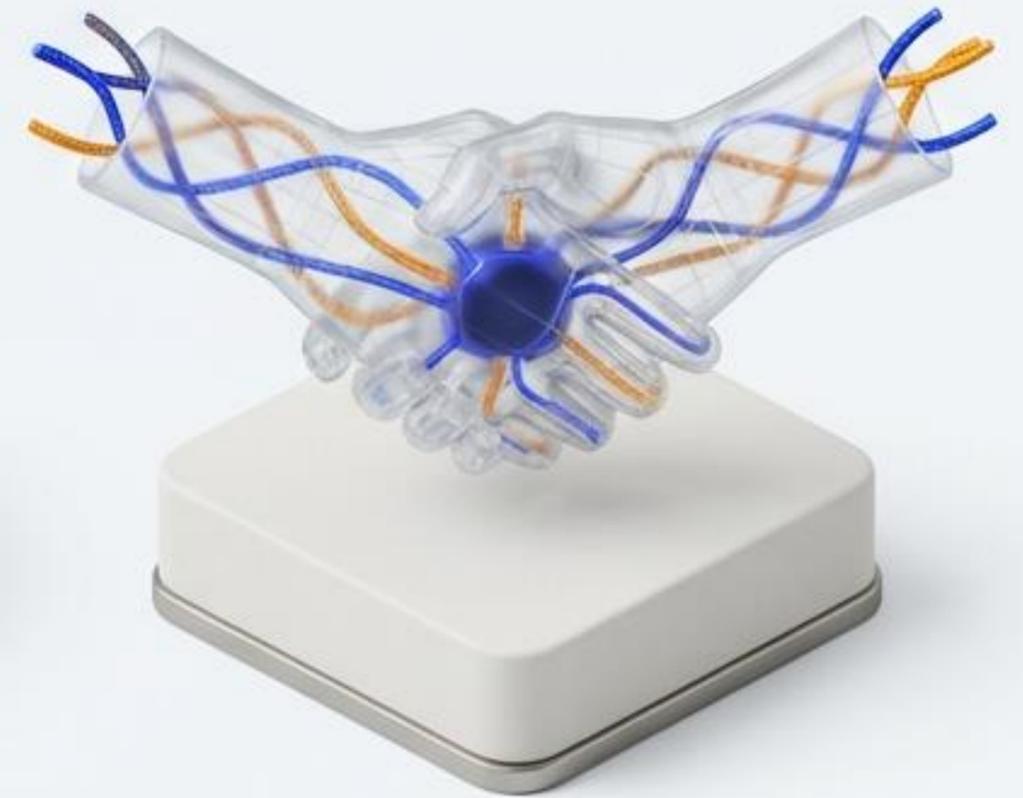GenAI for Bharat, by Bharat

Solving Payment Friction

Fraud

Localized algorithms spotting Indian-context scams.

Reconciliation

Handling 250,000 Transactions Per Second (TPS)
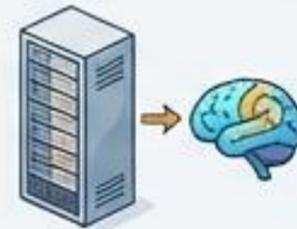
Dispute Resolution

Error-free, culturally attuned resolution.

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Fail Fast, Forward Together

Co-Design Strategy: Academia and Industry working in tandem.

The Shift: From bloated general LLMs to indigenous contextual models.

Workforce: Upskilling teams for privacy-by-design.

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Innovation-Friendly Regulation

Regulation

- **RBI Sandboxes:** Testing grounds with privacy-audit shields.

- **Harmony:** Aligning 'Free AI' with global safety standards (EU AI Act/OECD).

- **Speed:** Replacing colonial laws with digital-first regulations in two years.

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The Path Forward

BharatGen: Expand LLMs into Indic domains and deepen industry ties.

In Progress

Banks & Fintechs: Adopt model governance, ensure data purity, demand explainability.

In Progress

Regulators: Harmonize sandboxes to foster Indic-tailored innovation.

In Progress

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Atmanirbhar Bharat 2047

Sovereign stacks for fraud-proof, inclusive payments.
Elevating service, speed, and experience.
Join the revolution at bharatgen.com.
India's AI payments throne awaits—built by us, for Bharat.

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