

# Tarun Sharma

Senior Forward-Deployed Engineer · Full-Stack & Infrastructure · Software-Defined Vehicles

Bengaluru, India · work.tarunsharma@gmail.com · +91 77030 90720 · linkedin.com/in/tarunsha · github.com/shtarun · shtarun.github.io



Senior engineer who **embeds with customers and ships production software end-to-end** — from embedded Linux and open-source infrastructure to cloud backends and AI-native products. Spent **5 years at Jaguar Land Rover** taking platforms from board-level alignment to silicon, running startup PoCs as an Innovation Champion, and delivering shoulder-to-shoulder with partners; now founding a **Digital Twin venture**, scoping pilots with industrial clients and shipping full-stack AI products. I close the gap between a customer's problem and working software.

## // EXPERIENCE

### Twinity Labs

Sep 2025 – Present

#### Founder & CEO

Bengaluru, India

- ♦ Founding an applied **Digital Twin** venture — scoping pilots with industrial clients and owning the path from problem discovery through GTM, partnerships, and production delivery.
- ♦ Ship AI-native products end-to-end as sole engineer: Flutter clients, AWS serverless backends (**Lambda, DynamoDB, Cognito**), and **OpenTofu** IaC — architecture to release.
- ♦ Built & shipped **SetMind**, an AI strength-training app: offline-first Flutter + Drift/SQLite with bidirectional cloud sync (**16-table** schema), Claude/OpenAI generation, RevenueCat monetization; full lifecycle driven with agentic AI tooling (Claude Code, Cursor, vLLM, LiteLLM).

### MKS Enterprises

Jan 2026 – Present

#### General Manager // CONCURRENT

Jamshedpur, India

- ♦ Lead operations and P&L for a heavy-crane trading and services business serving major industrial and public-sector clients.
- ♦ Drive sales, annual maintenance contracts (AMC), and spare-parts supply; oversee on-ground crane operation and safety-training programs.

### Jaguar Land Rover

Sep 2020 – Aug 2025 · 5 yrs

#### Software Engineer → Senior SWE, Software-Defined Vehicles // + INNOVATION CHAMPION

Bengaluru, India

- ♦ Presented **base-OS and platform progress to the JLR & Tata Motors boards**, aligning executives on scope, risk, and the **ASIL-B / ISO 26262** certification roadmap for a safety-qualified Linux platform.
- ♦ As **Innovation Champion**, ran startup collaborations end-to-end (problem discovery → scouting → PoC → funding); led a Digital Twin engagement with IndusTANTRA, **cutting turnaround from months to under 4 weeks** via direct senior-leadership alignment.
- ♦ Embedded with partners (Codethink) to deliver a **Deterministic Construction Service**, integrated image, and SDK for JLR's custom Linux; led **OS/BSP bring-up** on NXP S32N silicon (kernel, systemd, networking).
- ♦ Orchestrated **zero-downtime migration of 450+ GitLab repos**, drove the enterprise **Terraform → OpenTofu** shift + open-source build stack (BuildBarn, Lorry, Trustable), and published a repo template so new apps onboard in **hours, not days**.
- ♦ Built an automated **AWS boot-observability pipeline** (S3, Lambda, EC2, Redshift → Tableau) and a Python **Test Executable Generator** across dSPACE / Vector / NI on **300+** assets; mentored 4 interns (led to PPOs) & 2 graduate engineers. **1st Runner-Up**, JLR global GDD Hackathon.

### Internships & Early Research

2017 – 2020

- ♦ **Project Engineer, IIT Kanpur** (2020) — framed the problem & approach for a MagRail prototype with Hyper Poland (now Nevomo).
- ♦ **R&D Intern, ETA Technology** (2018) — designed an axially frictionless hydrostatic bearing (**60,000 kgf**) and friction-weld machine tooling in SolidWorks.
- ♦ **R&D Intern, Tata Steel** (2017) — Abaqus modelling of high-strain-rate plastic deformation, informing new automotive tensile-test specimen design.

## // SELECTED PROJECTS

- ♦ **ROBOTICS** 6-DOF Robot Arm Motion Planning — C-space construction with A\* and Rapidly-exploring Random Tree planners (MATLAB).
- ♦ **VISION / DEEP LEARNING** Computer Vision Suite — YOLO car detection, FaceNet face recognition (triplet loss), and VGG-19 neural style transfer.
- ♦ **CONTROL SYSTEMS** Inverted Pendulum Stabilization — output-feedback control under uncertainty with extended high-gain observers.
- ♦ **AEROSPACE** UH-60A Black Hawk Trim Analysis — coupled rotor trim via blade-element momentum theory and Newmark integration.
- ♦ **MECHATRONICS** Electromagnetic Actuator — moving-iron actuator for active damping; **exhibited at TechEx '19, IIT Delhi**.
- ♦ **SIGNALS / ML** Predictive Maintenance — LSTM with spectrogram & clustering pipeline for early fault detection from machine audio (JLR R&D).

## // EDUCATION

### Indian Institute of Technology Kanpur

2015 – 2020

#### B.Tech-M.Tech Dual Degree, Mechanical Engineering

Kanpur, India

- ♦ Master's thesis on railway bogie suspension redesign **adopted by Indian Railways** for production rollout across FIAT-type LHB coaches.
- ♦ **President, Association of Mechanical Engineers** — led a 15-member team serving 700+ students; Teaching Assistant for two courses (200+ students).

## // TECHNICAL SKILLS

LANGUAGES	Python (FastAPI), Rust, C++, TypeScript, MATLAB
INFRA & CLOUD	OpenTofu / Terraform, GitLab CI/CD, AWS (Lambda, DynamoDB, S3, EC2, Redshift, Cognito), GCP, Podman, BuildStream, CMake / Meson / Ninja
SYSTEMS	Linux kernel, systemd, embedded bring-up (NXP S32N), RTI DDS, ISO 26262 / ASIL-B, deterministic builds, SBOM / supply-chain security
AI & PRODUCT	Claude & OpenAI APIs, agentic AI tooling, LSTM / CNNs, Flutter, Riverpod, offline-first sync
DOMAINS	Software-Defined Vehicles, Digital Twins, functional safety, predictive maintenance, robotics, multibody & machine-tool dynamics, FEA (ANSYS / Abaqus / COMSOL)

## // RECOGNITION

- ♦ **Publication** — "[Primary suspension failure analysis in FIAT-type LHB bogies](#)," *Engineering Failure Analysis*, vol. 138 (2022).
- ♦ **Asha Khanna Award** — national topper in Mathematics, ISC 2015 · JEE Advanced qualified.
- ♦ **1st Runner-Up**, JLR global GDD Hackathon (2021) — gaze-controlled HUDs, across all 6 GDD centers.
- ♦ **Deep Learning Specialization** (deeplearning.ai) — CNNs, YOLO, FaceNet, neural style transfer.