

THE CHANGING LANDSCAPE OF AUTOMOTIVE TECHNOLOGY INNOVATION

Swamy Kotagiri
Chief Technology Officer

A large, thick, red curved graphic element that starts from the bottom right and curves upwards and to the left, partially overlapping the white background.

SALES

\$36 Billion

EMPLOYEES

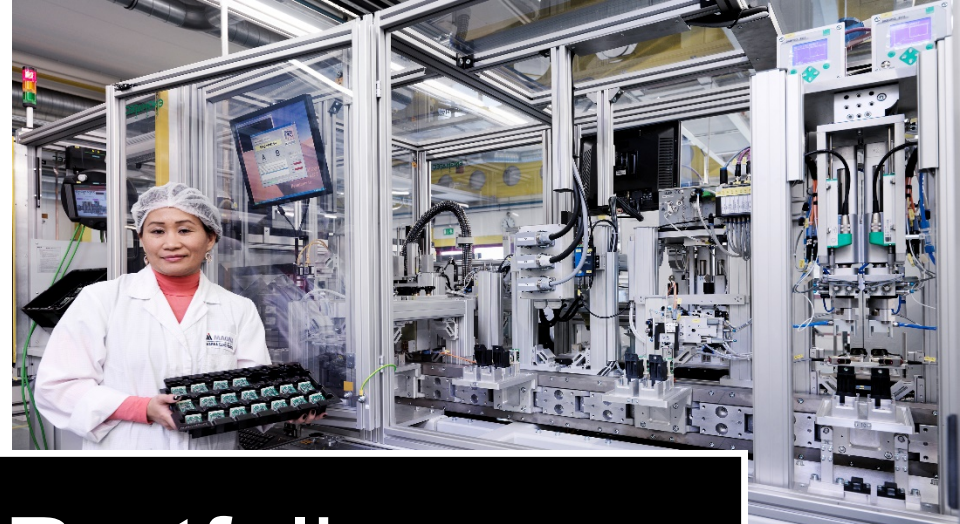
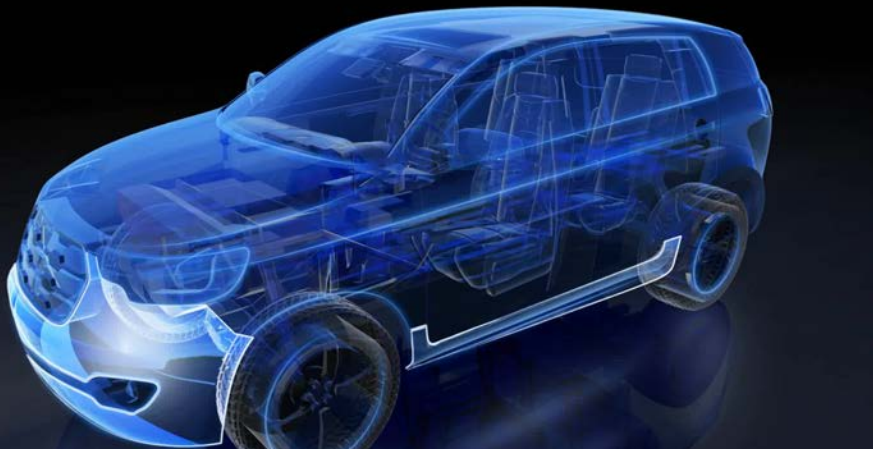
155,000

MANUFACTURING

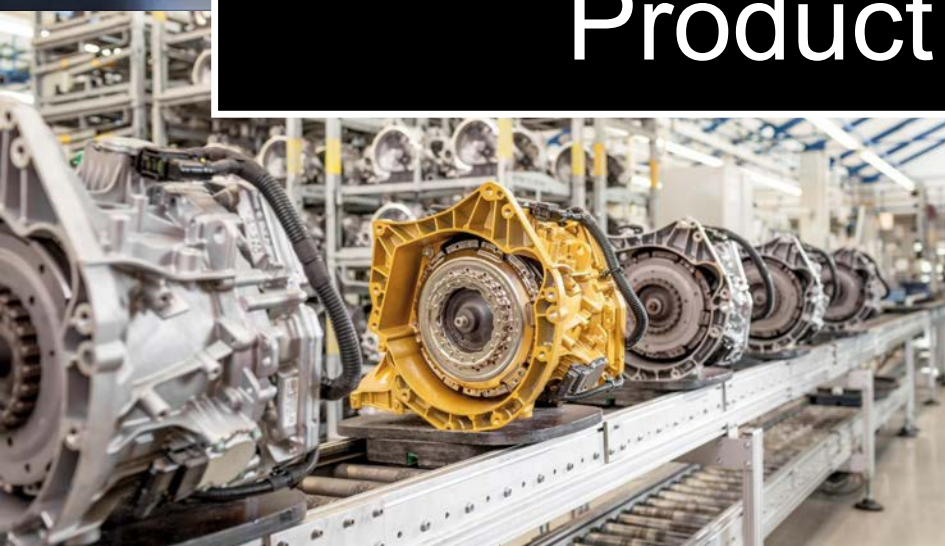
317 global sites

MARKET POSITION

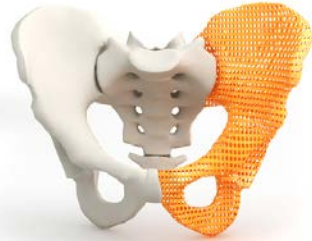
#1 North America
#3 World

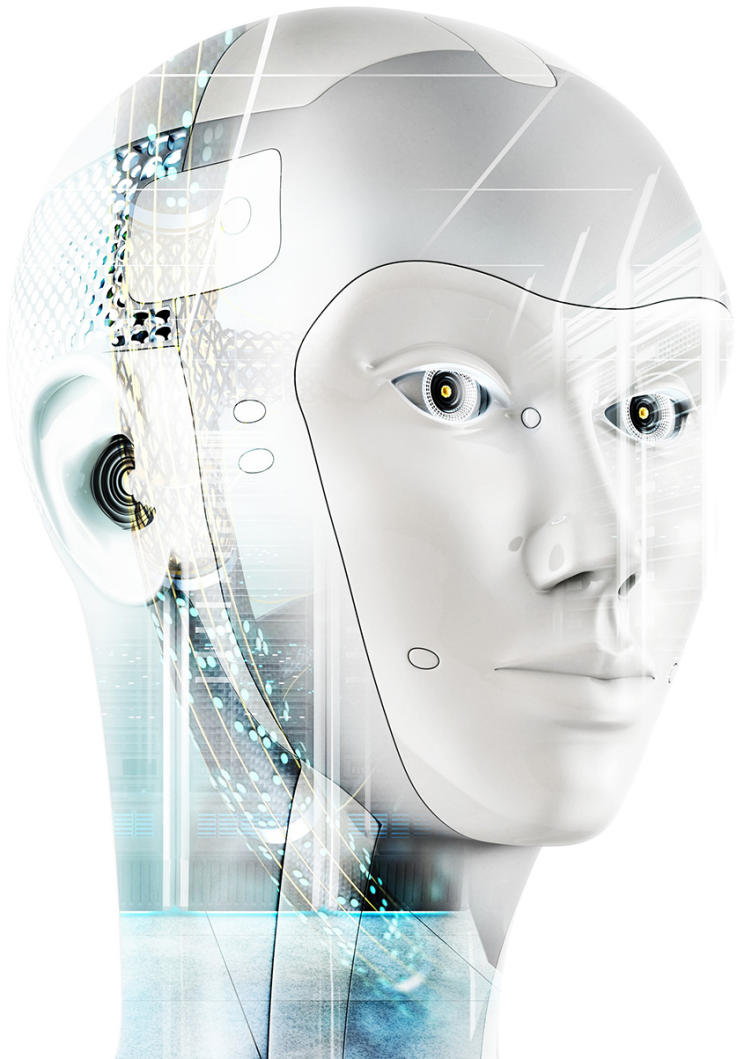


Product Portfolio



More Connected & Virtual World





Artificial Intelligence

Helping the vehicle to
make ethical decisions

Drones GPS & Path Planning Enabler to autonomous driving





TECHNOLOGY setting the pace

Emerging Mobility Ecosystem

Autonomy

Electrification

Connectivity

Mapping

Private Use

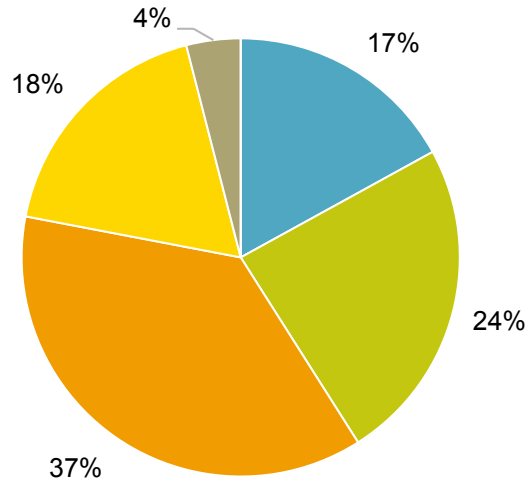
Car Sharing

Car Hailing

Mobility Apps

ADAS – 2025 Outlook

*Global take rate 2025

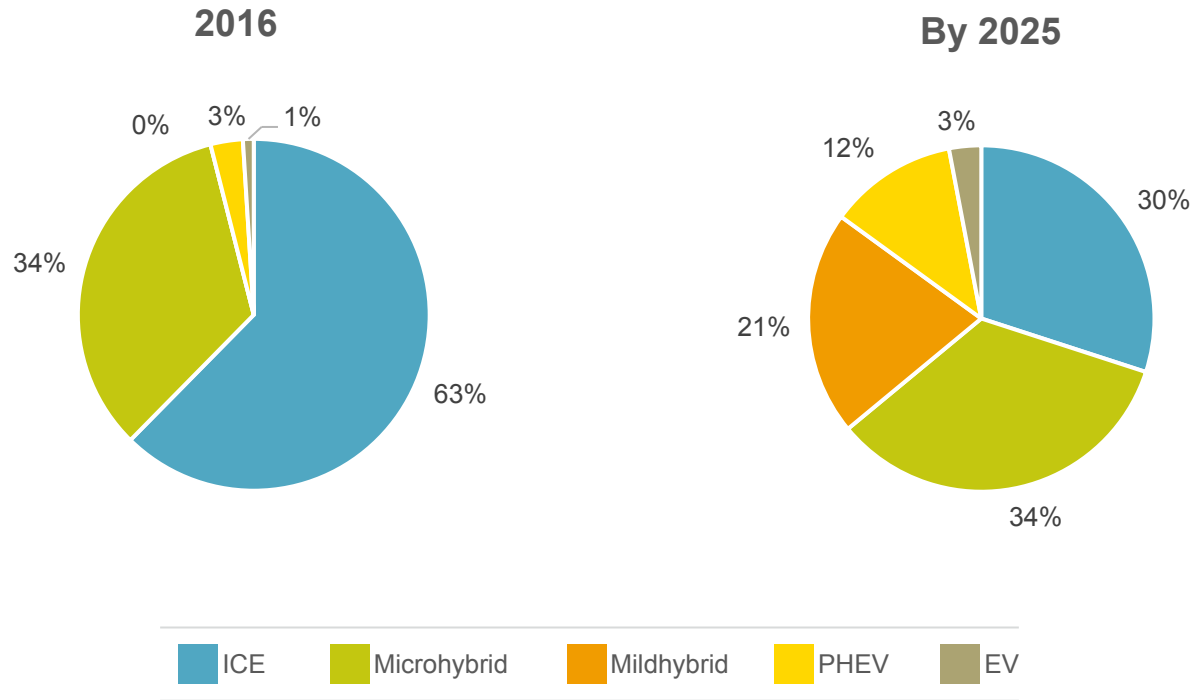


Level 0 Level 1 Level 2 Level 3 Level 4 Level 5



*Indicates Level 0-5, all other take rates are only Level 0-4

Global Electrification Outlook - 2025



Cross Industry Ideation



AEROSPACE



AUTOMOTIVE LUXURY



AUTOMOTIVE STANDARD



SURGICAL MONITORING



PERSONAL MONITORING



IN-VEHICLE MONITORING

Manufacturing Ecosystem

**INTELLIGENT
GUIDED
VEHICLES**



**COLLABORATING
ROBOTICS**



**INTELLIGENT
BUILDINGS**



LOCALIZATION



HMI

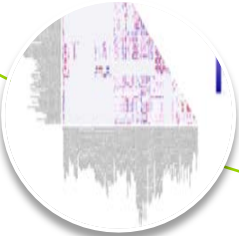


**GENERATIVE
FABRICATION
(3D PRINTING)**

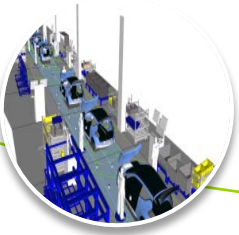


Smart Factory

**BIG DATA
PAINT**



**BIG DATA
ASSEMBLY**



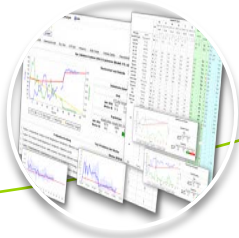
**BIG DATA
& ANALYTICS**



**DIGITAL C-PARTS
PROCESS**



**OPERATIONAL
EXCELLENCE**



EXOSKELETON



Manufacturing and Advanced Robotics



The background features a central horizontal band of vibrant blue with a glossy, wavy texture. This band is set against a light gray background with subtle, curved, concentric lines that create a sense of depth and movement. The overall aesthetic is clean, modern, and professional.

INNOVATION inside and outside

Magna Investment Portfolio



MIT Startup



ARGUS



13 Investments

\$69 M in equity

0 Exits

New Level of Innovation Outreach

- Established an advanced technology advisory board
- Out of 800 technology subjects,
 - investigated 86 new potential innovations
 - led to 22 active projects
- Ongoing innovative research projects with several world-renowned universities
- Invested in several venture capital organizations, collaborating on future technology ventures

FOCUS AREAS

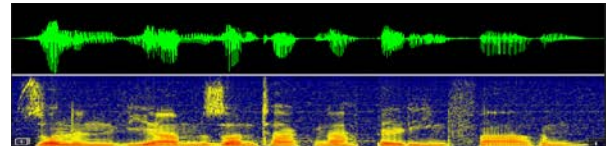
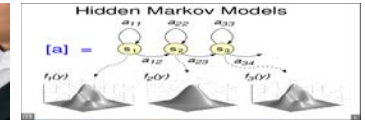
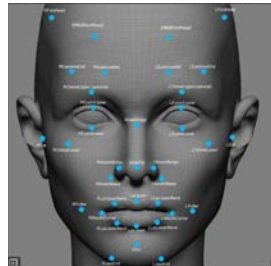
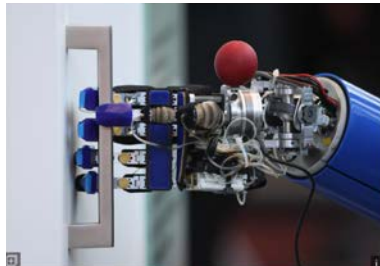
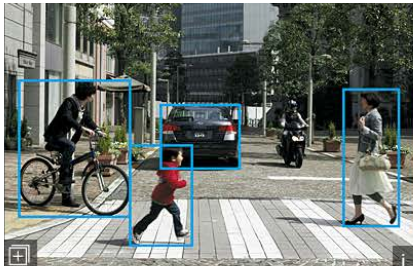
Domain Areas for Study

A hand holding a glowing brain with circuit lines extending from it, symbolizing technology and AI. The background is a solid blue color with a faint, larger-scale version of the hand and brain graphic.

- Electric Machines & Energy Storage
- Powertrain & Vehicle Architecture
- Electronics & Sensors
- Artificial Intelligence
- Materials
- Manufacturing & Advanced Robotics
- New Mobility

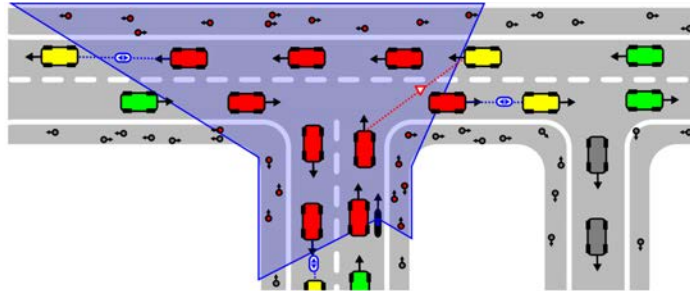
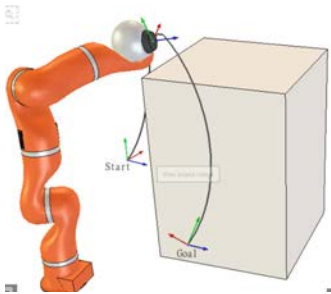
Example: AI Driven Detection & Classification

- Automotive Driver Assistance Systems (ADAS)
 - Object Detection, Classification, Scene Segmentation, and Localization at various speeds and environmental conditions
 - Facial, Speech, Optical Character Recognition, Authentication
- Robotics for Manufacturing
 - Object Classification, Localization and Manipulation
 - Physics Simulation Models to play out manufacturing scenarios for better design, validation, etc.
 - Better Engineering through Quality and Process Feedback from past



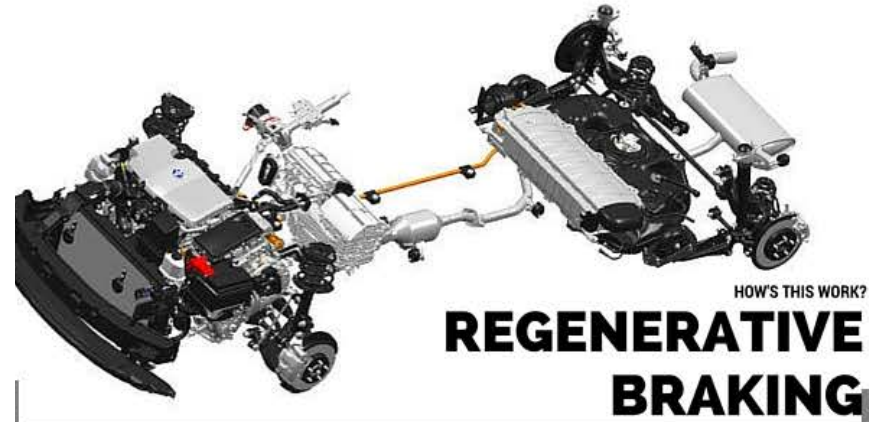
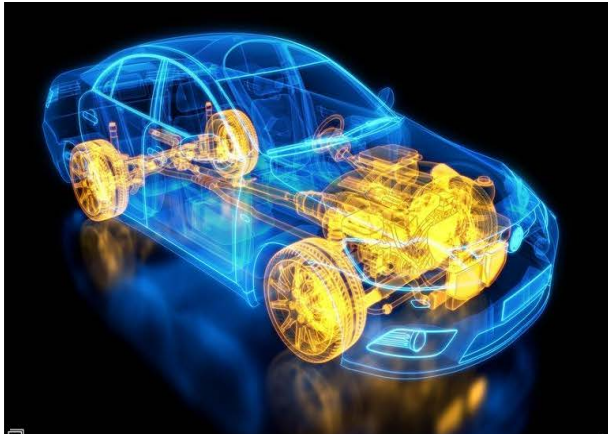
Example: AI Driven Path Planning and Multi-Agent

- Path Planning and Environmental Modeling
- Multi-Agent Dynamic decision making based on a multiplicity of sensor inputs, intelligence and ethical considerations



Example: Electric Motors

- High Efficiency, Torque & Power Density Traction Motors
- Drive-by-wire
 - Brake by wire
 - Steering by wire
 - Throttle by wire
- Regeneration
 - Brake Energy Regeneration
 - Gravitational Potential Energy Regeneration
 - Exhaust Energy Regeneration



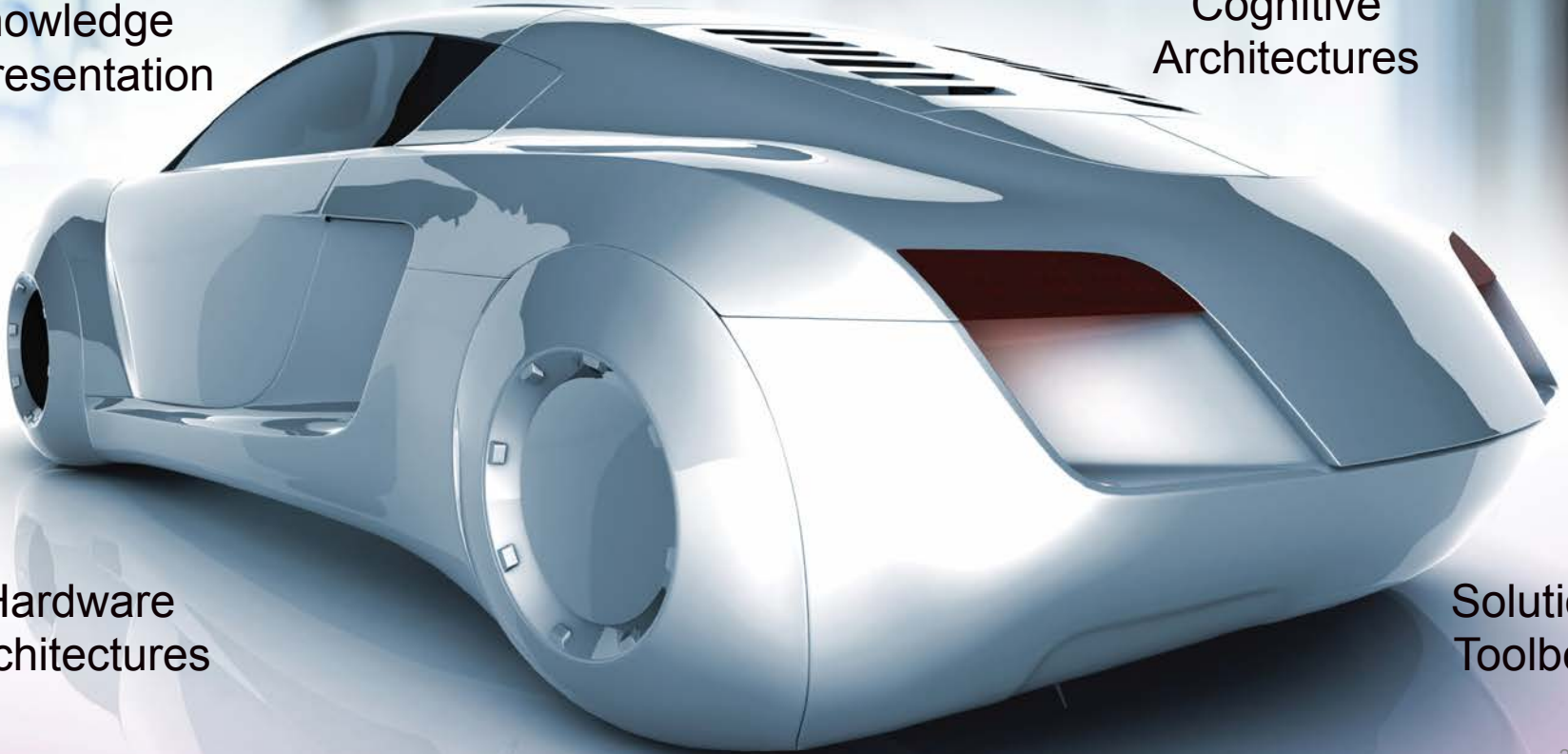
Contact Us With Your Best Techniques & Technologies

Knowledge
Representation

Cognitive
Architectures

Hardware
Architectures

Solution
Toolbox





DRIVING **EXCELLENCE.**
INSPIRING **INNOVATION.**