

Intelligent rail track perception for predictive maintenance & operational efficiency

FEV SIGNATURE SOLUTIONS

FEV.io

Boost rail safety & uptime with intelligent track perception

FEV offers

- ▶ AI-based detection of rail defects and early-stage anomalies
- ▶ Real-time track-health estimation
- ▶ Seamless integration with portability on existing onboard systems
- ▶ Comprehensive toolchain: simulation, datasets, annotation, scenario generation
- ▶ White box option to enable you to use FEV's solution as basis for your own development

Why FEV

- ▶ 45+ years of experience delivering innovative solutions to the world's top automotive and mobility brands
- ▶ Deep domain knowledge across powertrain, electrification, digitalization, and intelligent mobility systems
- ▶ Flexible integration into your existing hardware and software ecosystems



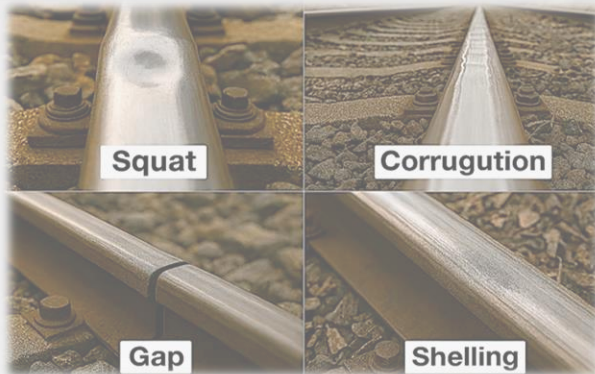
Key features of our rail track perception solution

System Functions

- Operates at locomotive speed up to 60 MPH
- Track & defect detection across varying conditions
- Random object detection, as vegetation, rocks, debris
- Sensor fusion for robust detection

Your Benefits

- Increase network uptime
- Avoid unplanned failures
- Increased safety
- Lower manual inspections
- Lower false positives



Sensor Inputs

Rail Track
Dataset

Defect
Overlaying

Synthetic Scenario Generation

Model Training/
Fine tuning

Defect Detection

Key Components

Perception

- Track-health insights to reduce unplanned failures
- Pre journey, on journey inspection methods

Predictive Maintenance

- Early maintenance warnings
- Improves uptime, reduces manual inspections, increases safety
- Less cost on maintenance
- Easy to scale and integrate

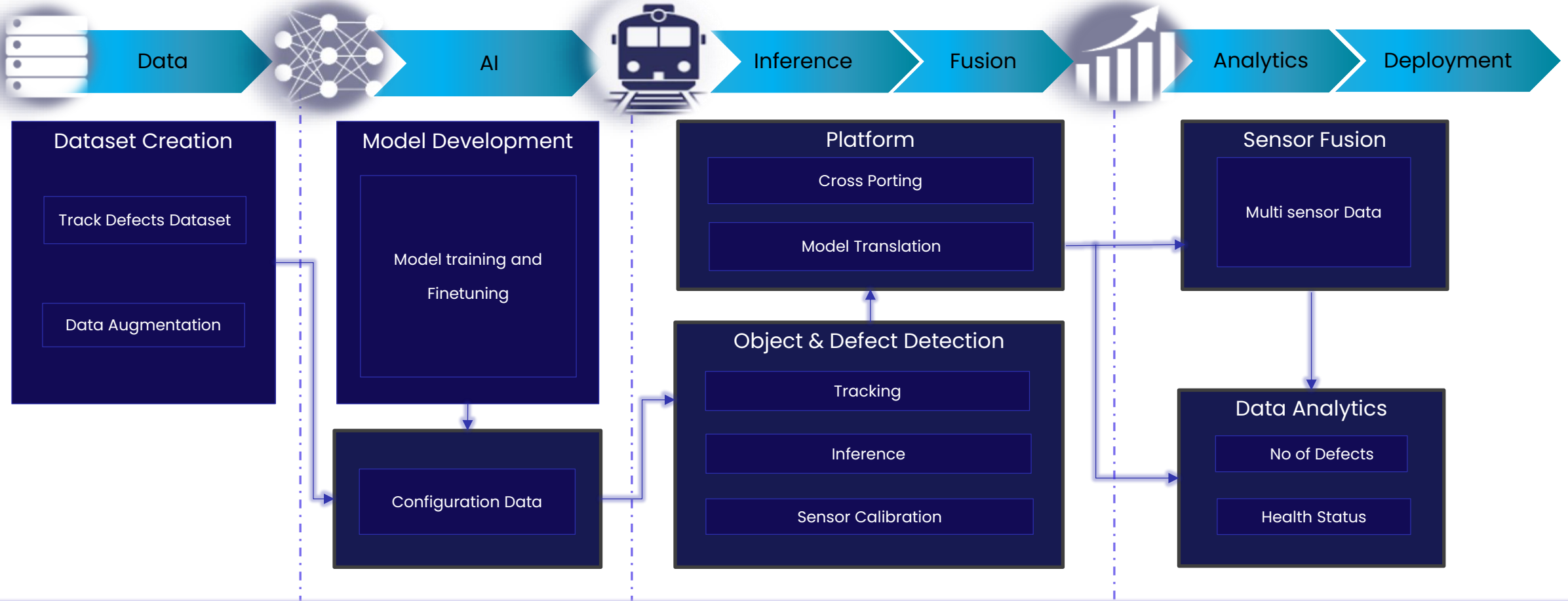
Geometry

- Track-health scoring and parameter estimation
- Integrated data analytics dashboards
- Gauge (width)
- Cross-level (superelevation)
- Vertical undulations



Our modular, open AI architecture tailored to your predictive maintenance needs – integrates seamlessly into your existing systems and toolchains

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- Flexible solution which can be tailored to your needs
- Leverages AI tool chain (dataset creation, train models, integrate and evaluate) to solve the current problems in rail

Get in touch with us for further information



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