

Machine learning

Machine-learning development from dataset preparation through model evaluation and integration. We connect the modeling choices to the task, available evidence, resource constraints, and real deployment behavior.

WHAT WE CAN DO

- 01

Data & evaluation design

Define labels, splits, useful metrics, and leakage-resistant validation before optimizing a model.
- 02

Model development

Select and train approaches for perception, prediction, or classification against a clear baseline.
- 03

Edge deployment

Quantize, export, and integrate models into embedded or local-compute environments.
- 04

System integration

Connect preprocessing, inference, postprocessing, and application behavior into a testable pipeline.

TECHNOLOGIES & WORKING AREAS

Computer vision / Predictive models / TinyML / edge inference / Quantization / Model evaluation

A CLEAR PATH TO HANDOVER.

WHAT YOU RECEIVE

- Reproducible preprocessing and modeling code
- Model artifacts and export configuration
- Evaluation report and baseline comparisons
- Target-side integration or inference pipeline
- Documentation of data assumptions and limits

HOW THE WORK PROGRESSES

- 01 **Define the task**
Data, labels, deployment target, and metrics.
- 02 **Establish a baseline**
Validation design and an initial model.
- 03 **Train & integrate**
Model development and target execution.
- 04 **Evaluate the system**
Quality, resource use, and failure cases.

RELEVANT ENGINEERING

ESP32 Battery SoC/SoH Monitor

Random Forest models exported to C, with cell-out cross-validation.

UAV Human Detection System

A quantized detection model integrated for Raspberry Pi CPU inference.

TO SCOPE YOUR PROJECT

- / Representative data and label availability
- / Task definition and evaluation priorities
- / Target hardware and inference constraints
- / Data-handling and integration requirements

LET'S DISCUSS YOUR PROJECT

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