LMI TECHNOLOGIES

GoPxL PRO TOOLS

GoPxL Pro Tools is our new series of inspection toolsets for targeted applications. Each toolset consists of a selection of GoPxL tools running on GoMax to solve a specific inspection task.

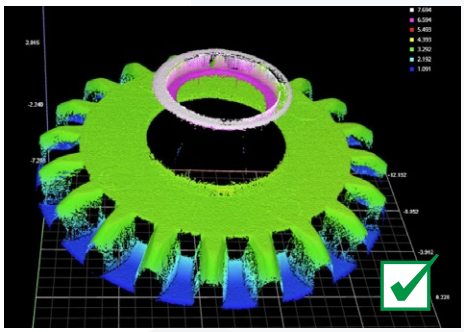
Anomaly Detector

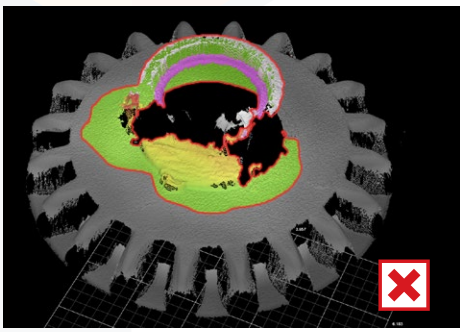
The **GoPxL Anomaly Detector** toolset leverages traditional and AI-based tools in GoPxL to provide powerful **3D defect detection** for challenging applications in the production of parts for the automotive, food, building material, tire, and many other industries. Users can train and deploy the solution all onboard GoMax without relying on additional cloud or hardware-based resources for initial and subsequent model training.

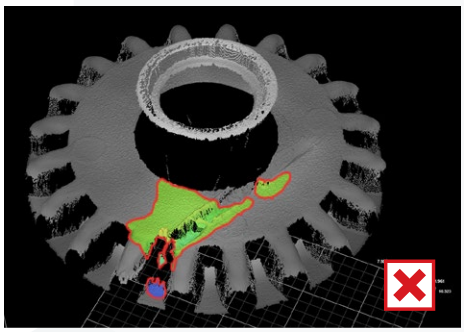
Powered by **GoMax** and **AI**

Anomaly Detector integrates with all Gocator Line Profiler, Snapshot, and Line Confocal Sensors when accelerated with GoMax. The firmware is available for download from the LMI Website free-of-charge. Purchase of a licensed LMI Dongle is required to run Anomaly Detector with a LIVE sensor. License-free evaluation is available with firmware running on GoMax in REPLAY mode.

Common Use Cases

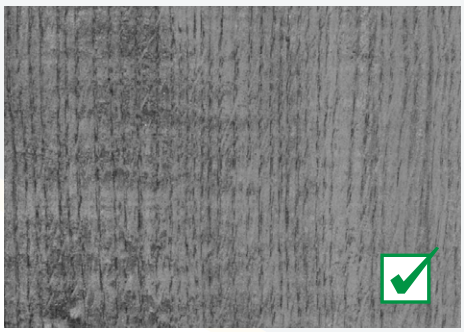


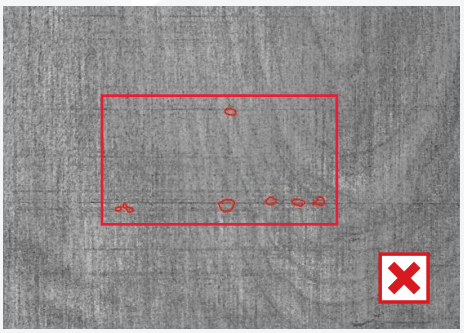




Part Inspection

Find defects and irregularities on machined or casted parts with complex geometry. Train an AI model to identify good and bad parts directly on the production line without a cloud connection, a CAD file, or complex thresholds typically used with traditional tools.

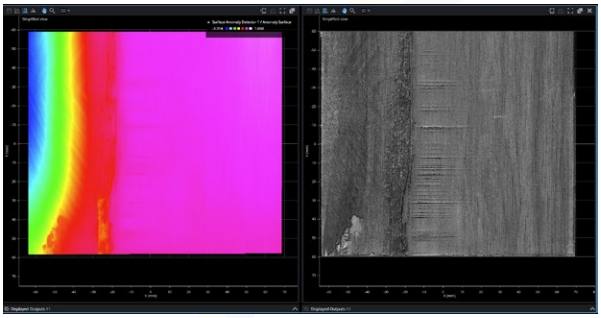




Surface Inspection

Find defects and irregularities on flooring and building materials by easily connecting traditional and AI-based tools in GoPxL. Use surface edge and feature tools to mask the board and anomaly detection to locate defects using intensity data.

Key Features

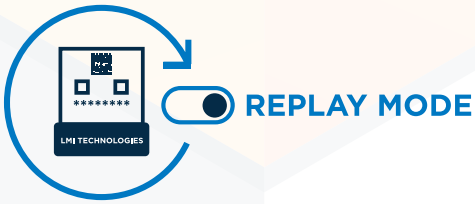


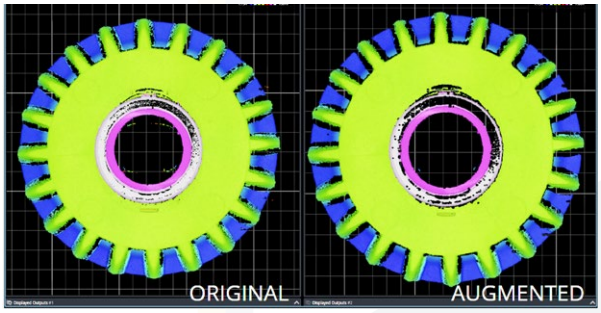
Train on 2D intensity or 3D height map data

Scan parts with intensity and surface data and select the best option at time of training. Use a 3D visualizer to view complex parts and improve labeling accuracy.

Preview functionality without a license

Evaluate anomaly detection with a GoMax in replay mode and train and perform inference without a license.



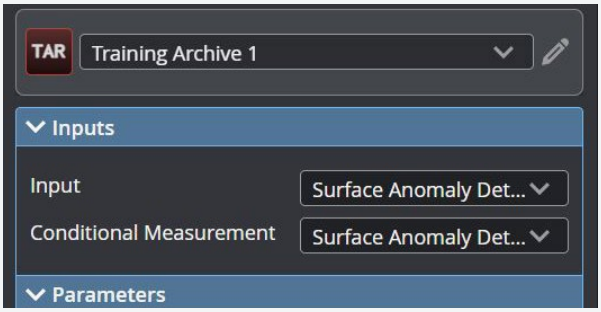


Generate synthetic and augmented data

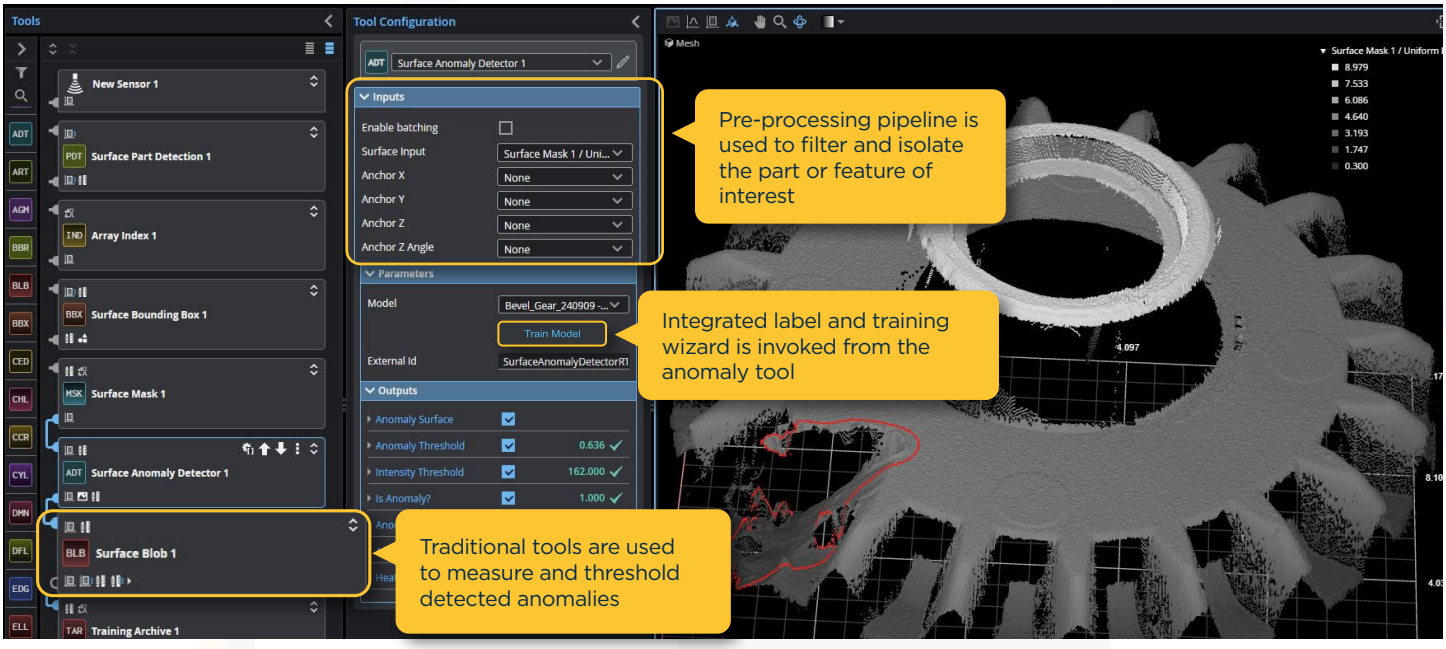
Reduce the number of images required for training with integrated generation of synthetic defects and augmented frames that improve the performance of your model.

Store new production data directly on GoMax

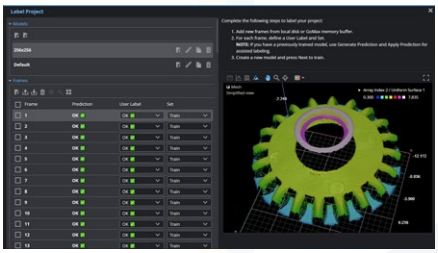
Use GoMax to store production data directly to a project archive that can be used to quickly train a new model and improve performance of your application.



Integrated with GoPxL

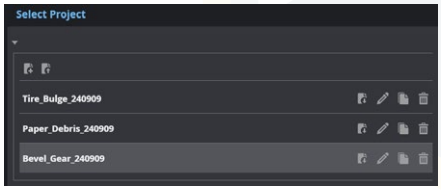


Benefits



Detect features of varying shape and size

While traditional tools are excellent at blob and segmentation, they require tuning of thresholds, often specific to each part. With GoPxL Anomaly Detector, the user is not required to manage detection thresholds. Training relies on providing a dataset of OK and NG parts and creating a detection model specific to the parts in the dataset.



Integrated AI modelling workflow

Model training and related datasets are managed directly inside of GoPxL tools, so you spend less time moving files and datasets compared to using a separate application for training models.

Train on the production line

Train data directly on GoMax and avoid the time, cost, and data security concerns related to moving data to the cloud or local PC. Training and inference uses the same license, allowing for models to be updated in production without an additional development license.

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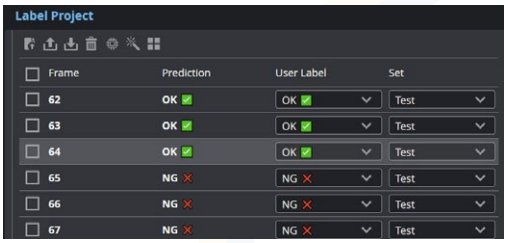
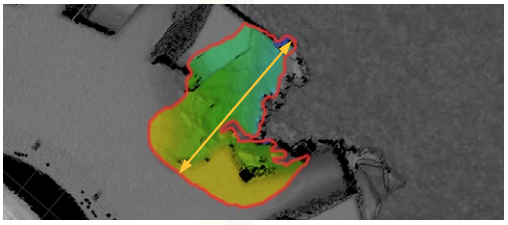
Anomaly Detector

Benefits



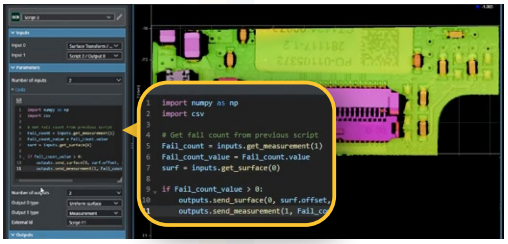
Use Prediction to label new production data

After initial training, rely on assisted labeling to make iteration fast and easy.



Measure anomalies and refine acceptable thresholds

Surface anomalies are passed to subsequent tools for measurement and gauging. Users can pass anomalies of a certain size or shape, depending on what is considered acceptable to the end user.



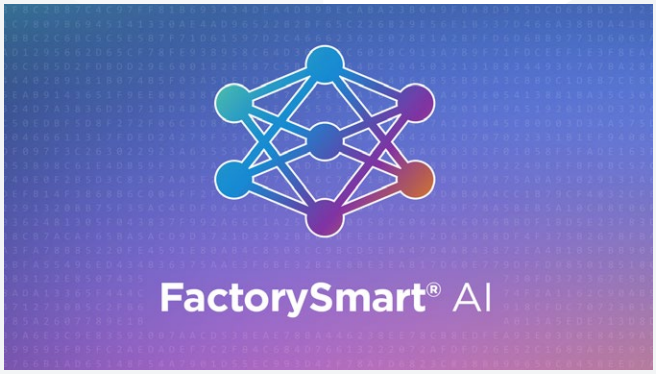
Add custom functionality with Script and Python GDK

Use the Python-based script tool to add custom logic or pull measurement thresholds from a local file. Advanced users can leverage the Python GDK to train models using open source and proprietary tools for subsequent deployment.

Let Our Experts Do The Work

FactorySmart® AI Solutions

For more demanding applications or teams without internal resources, contact our FactorySmart AI Solutions team and let us develop the pipeline, model, factory communication, and production interface to solve the inspection.



AMERICAS
LMI Technologies Inc.
Burnaby, BC, Canada

EMEAR
LMI Technologies GmbH
Teltow/Berlin, Germany

ASIA PACIFIC
LMI (Shanghai) Trading Co., Ltd.
Shanghai, China

LMI Technologies has sales offices and distributors worldwide. All contact information is listed at lmi3D.com/contact