![Teledyne FLIR logo]

PRISM™ AI - AUTO

Detection and Tracking Software Framework for Automotive Perception System Development

Prism AI software is a framework that provides classification, object detection, and object tracking enabling perception engineers to quickly start integrating thermal cameras for advanced driver assistance systems (ADAS) and autonomous vehicle (AV) systems. Developers can use Prism AI as the primary perception software or as reference software while taking advantage of camera calibration tools, along with visible-and-thermal fusion and advanced image processing capabilities that offer superior perception capability, especially for pedestrian and animal detection.

Compatible with Teledyne FLIR market-leading thermal cameras including Boson®, Tau®2, and the FLIR ADK, Prism AI features camera-to-ECU authentication, a key requirement for automotive production deployment. Prism AI tools provide simplified data integration with Teledyne FLIR Conservator™ dataset development software as well as the industry's largest thermal and visible training dataset. The combination of validated models with successful performance in NCAP-based automatic emergency braking (AEB) tests, AI tools, ONNX model plugins, and annotation services decreases development cost and shortens time to market for a thermal-enabled ADAS or AV systems.
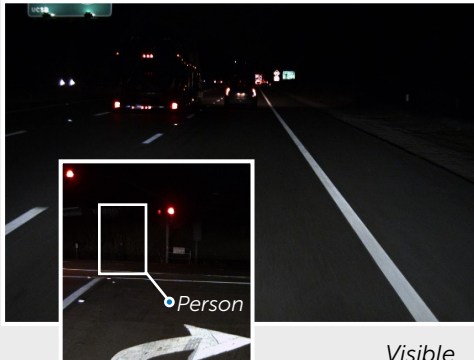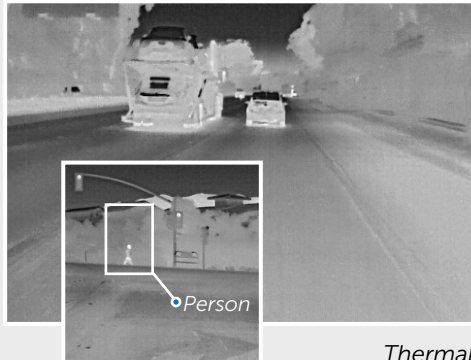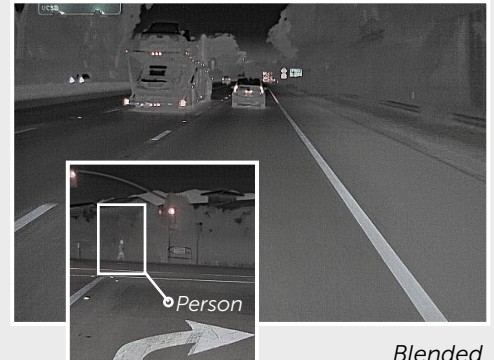
Visible   *Thermal*   *Blended*

IMMEDIATELY START EVALUATING THERMAL SENSOR DETECTION CAPABILITIES

Reference software delivers baseline performance and lowers investment for thermal-camera-enabled perception testing

- Object classification, detection, and tracking in thermal and visible light wavelengths
- Calibration tools provide camera lens dewarping and rectification
- Fused visible and thermal image blending and object highlighting
- Advanced image processing includes super resolution, denoising, and sharpening

LEVERAGE TELEDYNE FLIR PERCEPTION ECOSYSTEM TO SHORTEN TIME TO MARKET

Suite of development tools provide an open, "white-box" foundation for ADAS perception software with thermal infrared capability

- Conservator data lifecycle management with model performance evaluation tool
- Annotated training datasets in both thermal and visible spectrums
- Quality, scalable thermal and visible image annotation services
- Low compute cost on desktop and embedded processors from NVIDIA, Ambarella, Qualcomm, and more

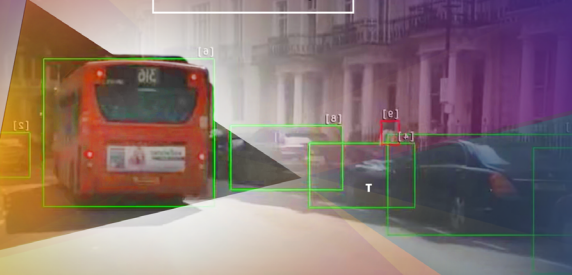## BUILT FOR DEVELOPERS WITH THE TELEDYNE FLIR BRAND PROMISE

Trusted global leader in thermal infrared sensing and solutions in automotive

- Expert technical services team available to support integration
- Compatible with Teledyne FLIR ADK, Boson, and Tau 2
- Shared repository drives rapid iteration and collaboration
- Authentication code/handshake capability

For more information visit:
www.flir.com/ADAS

www.teledyneflir.com

SOFTWARE FEATURES

Camera Interface	USB, GMSL1, GMSL2, and FPD-Link III
Authentication	Camera to ECU key handshake with 256-bit challenge/response
Dewarping	Radial and tangential lens dewarping
Rectification	Visible & thermal camera calibration process with pixel-accurate registration of visible & thermal
Imaging Blending (visible + thermal)	Multi-spectrum blended image for display that automatically adjusts blending factor for day and night
Sensor Fusion (visible + thermal)	Lightweight late-fusion implementation for object perception from thermal and color information from visible *(brake lights, traffic lights, street signs)*
Object Detector (CNN)	7 visible and thermal object detection categories: Person, car, large vehicle *(bus, semi-truck, train, etc.)*, bicycle, motorcycle, traffic light, and large animal *(deer, cow, horse)*
Multi Object Tracker	Lightweight, signal-processing based tracker reduces false positives and maintains target lock between frames in the absence of detections. Image-plane and ground-plane configurations available.
Thermal Image Processing	Automatic Gain Control (AGC), super-resolution, denoising, and sharpening

Specifications are subject to change without notice.
For the most up-to-date specs, go to www.flir.com/prism

For more information visit:
www.flir.com/ADAS

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