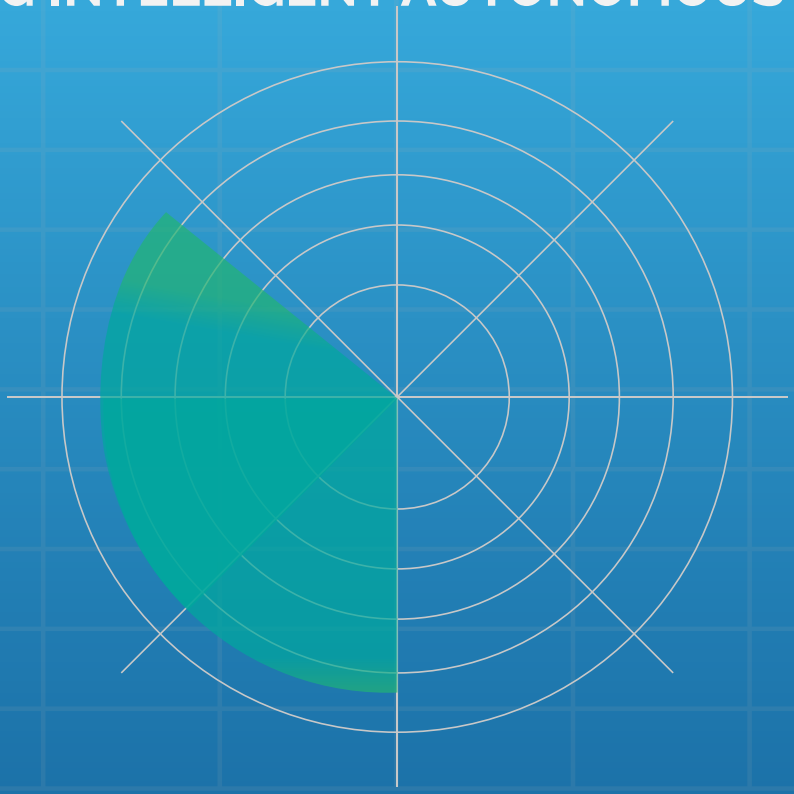
PATHPARTNER

RADAR OFFERINGS:
ENABLING INTELLIGENT AUTONOMOUS SYSTEMS



Autonomous systems (self-driving cars, industrial robots, logistical drones or even home cleaners), once a distant dream, are finally starting to make their way into the real world. Most of these systems are expected to make extremely crucial and safety critical decisions – making it imperative that the data provided to them is highly accurate, timely and reliable.

Radar based sensing is one such mechanism to perceive the operational characteristics and environment of such a system. While radar based solutions are not new, autonomous systems require a new level of performance, making development of such systems extremely complex. PathPartner, with its extensive experience in developing radar based systems, accelerates time to market for organizations developing radar based autonomous systems.

COMPREHENSIVE OFFERINGS TO ACCELERATE RADAR SYSTEM DEVELOPMENT

PathPartner offers end-to-end engineering services for developing radar based systems. Real world use-cases of radar applications require complex optimizations pertaining to cycle time, accuracy, reliability and tuning. With experience gained from actual implementations. PathPartner is well poised to be your ideal partner in radar system development journey.

SERVICE OFFERINGS

- Radar algorithm improvement consulting
- Custom radar algorithm development
- Radar algorithm optimizations and tuning
- System integration and use-case development
- Sensor fusion algorithm development
- Safety standard compliance e.g. SPICE & ISO
- Custom hardware board design

WHY PATHPARTNER?

- End-to-end system development
- Radar SDK product accelerator
- Expertise on TI's AWR and IWR sensors
- ISO 26262 compliant
- Experience in developing radar systems

MARKETS

AUTOMOTIVE

- Collision avoidance
- Blind spot monitoring
- Surround view
- Lane change assist
- Park assist
- Backover prevention
- Cross traffic alert

ROBOTICS & DRONES

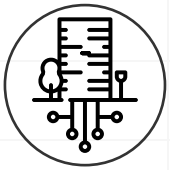
- Collision avoidance
- Presence and motion detection
- Room mapping

HOME AUTOMATION

- Presence and motion detection
- Surveillance systems
- Automatic doors
- HVAC controls
- Vacuum cleaners
- Lawn mowers

HEALTHCARE

- Vitals sensing – breathe & heart
- Rate monitoring
- Medical diagnostics



SMART CITY

- Traffic management
- Street light controls
- People counting
- Structure health monitoringcs

PATHPARTNER RADAR SDK: ENABLING PRECISE AUTONOMY IN INTELLIGENT SYSTEMS

PathPartner offers complete pipeline of radar algorithms as an SDK. The algorithms are suitable for various radar applications encompassing short range, medium range and long range Scenarios. Our SDK package is readily available on Texas Instruments' AWR 1642 Sensor However, it can be easily ported on other platforms for custom integrations.

Range FFT	Velocity FFT	Thresholding	Direction of arrival	Clustering	Tracking	Classification
		• CFAR CA • CFAR OS	• ESPRIT • MUSIC • Root MUSIC	• DBSCAN • Custom hybrid algorithm	• JPDAF + Kalman Filter	• SVM

- Enhanced accuracy in noisy enviornment
- Works in harsh climatic condition
- Better angle accuracy than off the shelf algorithms
- Static & Dynamic object detection and classification

SDK FEATURES

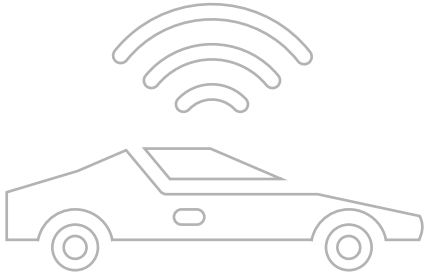
HIGH ACCURACY
Delivers high accuracy and resolution performance across use-cases

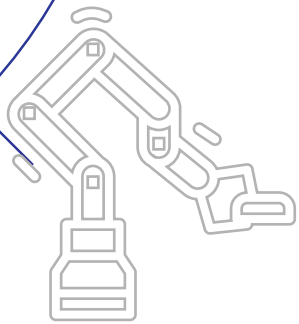
MODULAR
Extremely modular. Can be easily integrated with custom algorithms

HIGH PERFORMANCE
Runs real time at 30fps for a variety of use-cases

SENSOR FUSION READY
Well defined APIs for seamless integration with other sensors

PORTABLE
Currently available on AWR1642. Readily portable on other platforms





SUCCESS TRACK RECORD

Optimized performance of radar based object detection system and circumvented the need for new hardware for an Asian automotive tier-1.

Developed a blind spot monitoring solution using radar and delivered high accuracy for range/angle computations for an Asian electronics maker.

Developed custom drivers to facilitate seamless data transfer for an industrial solution. Based on radar for a global technology conglomerate.

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