Taiwan's AutoSys turns self-driving Algorithms into next-gen AI exports

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As one of the most demanding testing grounds for AI, autonomous driving technology has become a high-security laboratory where next-generation AI applications are forged. Analysts note that as much as 50 to 70 percent of the algorithms used in self-driving systems can be efficiently transferred to non-automotive fields, giving established players a distinct "spillover advantage" over newcomers. From Tesla to Chinese automakers and established brands in Europe, the United States, Japan, and South Korea, automotive AI is now extending into adjacent industries such as smart manufacturing, robotics, and unmanned aerial systems (UAVs).

AutoSys Intelligent, a developer of autonomous driving algorithms, is at the forefront of this transformation in Taiwan. Building on rapid growth in smart cockpit systems and advanced driver assistance systems (ADAS), the company is now applying its Level 4 autonomous driving expertise to drones, industrial robots, and even smart healthcare. Its experience with high-safety sensor fusion allows it to translate complex automotive standards into other high-stakes environments.

AutoSys's competitive edge lies in software optimization that maximizes hardware performance across diverse chip architectures. This capability has proven critical in drone applications, where navigation systems must detect and avoid complex outdoor obstacles such as power lines and tree branches with precision and speed.

Chang-Feng Hsu, AutoSys's general manager, said the company is in active conversations with both commercial and defense UAV manufacturers to integrate its sensor fusion algorithms. The system merges signals from multiple sources, including cameras, radar, and other sensors; and turns them into a unified decision-making model, ensuring operational safety in unpredictable environments. Hsu stated that the technology evolved directly from AutoSys's self-driving car research.

AutoSys is also applying its technology in smart healthcare. In hospitals, autonomous mobile robots (AMRs) used for medication delivery and patient support require exceptionally high standards of safety and reliability. Therefore, AutoSys is collaborating with several hospitals on AMR projects that incorporate self-driving–level obstacle avoidance, human-machine interaction, and precision AI-assisted medication handling.

Because a single hospital project may only involve ten to twenty units, AutoSys has adopted a total solution model to address the fragmented and fast-changing nature of non-automotive markets.The company integrates standard industrial computers and camera hardware from partner manufacturers, providing software-hardware integration services that improve profit margins and added value, while maintaining its principle of not producing hardware in-house.

In smart manufacturing, AutoSys is collaborating with the Kaohsiung plant of a major international integrated device manufacturer (IDM) to enhance automated optical inspection (AOI) systems. By embedding AI-based image analysis and algorithmic optimization, the project aims to improve inspection precision and accuracy. The partnership is now nearing a formal agreement.

AutoSys's cross-industry strategy represents more than just business diversification. It leverages years of experience in automotive electronics to launch a two-pronged offensive in non-automotive AI sectors, reducing costs and improving efficiency. According to Hsu, the certification cycle for non-automotive applications is about one year, compared with roughly two years for automotive systems. This enables the company to scale faster, accelerate revenue growth, and deliver earlier returns. AutoSys expects to achieve profitability and a public listing by 2027.

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