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(57) Abstract :

The invention pertains to an advanced autonomous driving system designed to enhance vehicle navigation and control. The system integrates a BLDC motor and a gear motor, managed by a 48-volt motor speed controller, to drive the vehicle. It incorporates a range of sensors, including ultrasonic, infrared, LiDAR, radar, GPS, and IMU, to gather comprehensive environmental data. This data is processed by high-performance units from NVIDIA or AMD, and additional processing is handled by Arduino and Raspberry Pi platforms. Power is supplied through a combination of 12-volt batteries, a solar panel, and a DC-to-DC booster, with a battery exhaust fan ensuring efficient cooling. The system also includes communication modules for wireless connectivity and auditory feedback. This setup enables precise vehicle positioning, real-time navigation adjustments, and improved autonomous driving capabilities

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