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Vehicle Insight: Smart Diagnostics and Workshop Finder

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Abstract: *Breakdowns in unfamiliar locations can be highly stressful for vehicle owners, often leaving them stranded without nearby mechanical support. Given the increasing complexity of modern automobiles, conventional diagnostic approaches are no longer sufficient for the average user. This paper introduces Vehicle Insight, an AI-powered, web-based platform that enhances vehicle diagnostics and service accessibility. By leveraging natural language processing (NLP) and machine learning, the system interprets user-described symptoms and delivers accurate diagnostic outputs, offering either self-guided troubleshooting or professional intervention.*

An integrated GPS module aids in locating certified workshops, scheduling services, and dispatching mobile mechanics. The platform also supports secure parts procurement, complaint resolution, and user feedback, fostering trust and service efficiency. With four distinct roles—Admin, User, Workshop, and Expert—this intelligent ecosystem streamlines modern vehicle care. This paper elaborates on the system's design, methodology, and potential impact in advancing automotive maintenance.

Keywords: Smart vehicle diagnostics, AI-based maintenance, NLP automotive support, Workshop locator, Django platform, Expert consultation

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