

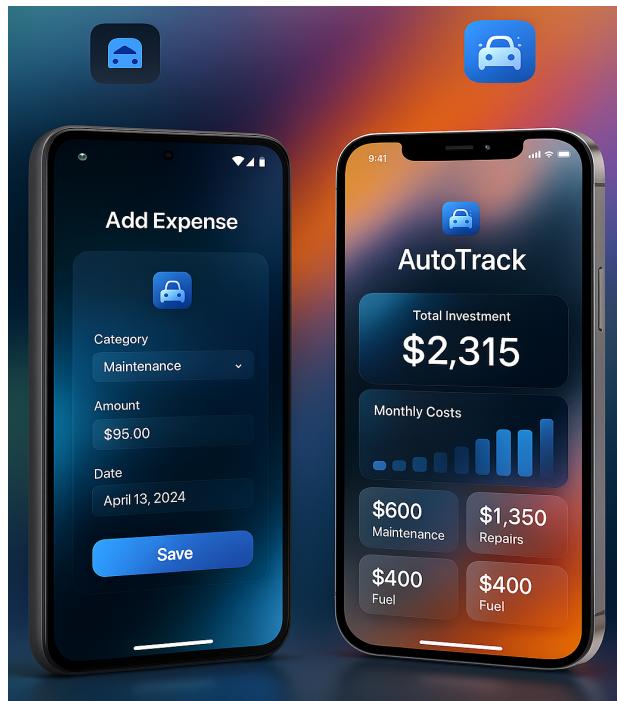
AutoTrack

Smart Car Maintenance & Investment Tracker

AutoTrack is a mobile application that helps car owners manage and track all their vehicle-related expenses and investments, whether mechanical, aesthetic, or administrative.

The goal of the app is to simplify the process of keeping track of maintenance operations, costs, and upgrades offering users full control over their car's history and total spending.

This project combines mobile development (cross-platform) with real-world data management and AI automation, demonstrating both practicality and innovation.



Principal Functionalities:

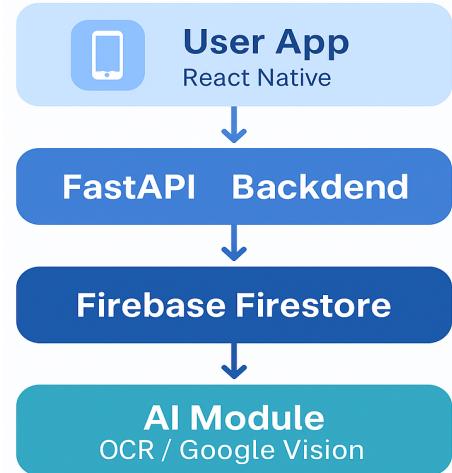
- ◆ **Garage Management:** users can register one or more cars, including model, year, mileage, the serial number and images
- ◆ **Expense Logging:** record all expenses under specific categories such as:
 - ◆ Mechanical (engine, brakes, oil, service)
 - ◆ Aesthetic (painting, detailing, wrapping, tuning)
 - ◆ Administrative (insurance, taxes, fuel, road tolls)
- ◆ **AI Receipt Scanner:** using OCR (Optical Character Recognition), users can upload photos of receipts - the app automatically detects the amount, date, and expense category or it can be add manually
- ◆ **Dashboard & Analytics:** visualize total costs, category-based charts, and monthly spending reports
- ◆ **Reminders:** notifications for upcoming service, insurance renewals, or technical inspections (ITP)
- ◆ **Data Export:** ability to export history and expenses as a PDF or Excel report

Use Case Scenarios:

- A car owner uploads a photo of a fuel receipt → the app automatically extracts the date, amount, and category.
- The user receives a reminder for the next technical inspection (ITP) or insurance renewal.
- The dashboard visualizes total monthly spending by category (fuel, service, insurance).

Architecture & Technologies:

- ◆ **Frontend:** React Native (cross-platform mobile)
- ◆ **Backend:** FastAPI
- ◆ **Database:** Firebase Firestore
- ◆ **AI / OCR:** Google Vision API / Tesseract
- ◆ **Data Visualization:** Recharts / Chart.js
- ◆ **APIs:** Google Calendar (for reminders), Google Drive (for backup)



React Native – choose it for its cross-platform flexibility and strong community support

FastAPI - allows rapid backend development with modern Python features

Firebase - ensures real-time data synchronization and secure cloud storage

The OCR module, powered by **Google Vision API / Tesseract**, automatically detects text on scanned receipts and classifies data into structured fields (amount, date, category).

Future extensions may include **machine learning models** for automatic anomaly detection (like: unusually high expenses) or **predictive analytics** for maintenance cost forecasting.

Future Work:

This project aims to provide a practical, intelligent, and user-friendly tool for managing vehicle-related data. Future improvements include predictive maintenance suggestions and AI-based cost trend analysis, and integration with connected car system for automatic data loggin.

Beyond academic interest, **AutoTrack** has potential real-world impact helping car owners save time, reduce costs, and maintain a clear overview of their vehicle's health and expenses.

Expected Outcomes

- Develop a fully functional cross-platform mobile app
- Integrate OCR-based expense recognition
- Build predictive analytics for maintenance and cost trends
- Deliver an intuitive and visually appealing user experience