

You said:

We are creating an opencv + mern stack based project for hackathon where it tracks and analyses the inventory through computer vision kindly suggest me the ideas and file struture how to connect this to the frontend

ChatGPT said:

That sounds like a solid and practical hackathon project, Naman! Since you're using **OpenCV + MERN stack**, your architecture will consist of:

- **Frontend** (React.js)
 - **Backend API** (Node.js + Express)
 - **Database** (MongoDB)
 - **Computer Vision** (OpenCV via Python OR via Node bindings like `opencv4nodejs` — Python is recommended for simplicity)
 - **Bridge** between Python CV and Node.js (REST API, Python Shell, or WebSocket)
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Suggested Project Idea

Project Title: *VisionTrack: Real-Time Inventory Monitoring with Computer Vision*

Core Features:

1. **Camera Feed Integration** – Use webcam/RTSP feed to monitor shelves or warehouse bins.
2. **Object Detection** – Detect product types, count items (e.g., using YOLOv5 or OpenCV template matching).
3. **Inventory Status Dashboard** – Show live stock levels, restock alerts, etc.
4. **Analytics & Logs** – View item trends over time (e.g., decreasing count, empty shelf detection).
5. **Restock Alert System** – Trigger alert (SMS/email/notification) if stock drops below threshold.