

# Varun Sivanesan

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## SUMMARY

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Full-stack developer delivering production-ready React interfaces and robust API integrations across modern cloud environments, with a focus on clean architecture and maintainability. Strong command of object-oriented design and C++ fundamentals, translating complex requirements into modular, high-performance solutions. Recognized for rapid prototyping, crisp UI/UX thinking, and shipping end-to-end features under tight hackathon timelines. Driven by real-world impact, with notable work in agricultural technology and adjacent biological analysis projects. Committed to continuous learning, pragmatic engineering, and measurable user outcomes that improve product velocity and quality.

## PROJECTS

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### BachatBox - Personal Finance Assistant

[Link](#)

BachatBox is a personal finance assistant, built in 2 days for Hacks 10.0, featuring a beautiful, easy-to-use React experience with clean CRUD ledger flows, receipt OCR, and SMS ingestion via webhook-driven REST endpoints; it adds a humanized chatbot grounded with RAG for context-aware budgeting and explanations, evolving flexbox dashboards powered by machine learning, predictive budgeting with gamified nudges, and a one-for-all module spanning real-time stock insights and a Splitwise-style shared expenses dashboard for collaborative tracking.

### BioLuminescence - ML Microscope App for Embedded Systems

[Link](#)

BioLuminescence is a microscopy-based species identification system featuring a Python Flask backend with an integrated machine learning model and a Next.js frontend for seamless image upload and results visualization; designed for low-power operation on embeddable systems like Raspberry Pi, it automatically identifies and enumerates microorganisms from microscope slide images without manual intervention, delivering fast results for field and lab workflows—built for Smart India Hackathon 2025.

### FarmVision - Retrieval-Augmented Generation based Farmer Assistant

[Frontend Link](#)

[Backend Link](#)

FarmVision is a minimalist, easy-to-use farmer assistant built for the IIC 2.0 hackathon, with ML prompts tuned early to detect and advise on lumpy skin disease—a major cattle threat in Rajasthan—so critical guidance appears fast and upfront. It features a resource-efficient chatbot that converts vague or low-literacy inputs into precise, structured prompts before calling third-party APIs, and a local RCNN step that analyzes uploaded crop/cattle images first, then augments findings with an external AI second opinion. A simple CRUD database maintains crops and cattle records, keeping day-to-day management organized alongside the assistant's guidance.

## EDUCATION

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2023 - 2027 Btech AIML at **Manipal University Jaipur**

2022 CBSE 12th Board at **Venkateshwar International School**

2020 CBSE 10th Board at **Venkateshwar International School**

## SKILLS

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Technical stack C++, TypeScript; OOP, Modular design, async patterns; React, Next.js, CSS, Tailwind, Clerk Auth; REST APIs, API Routes, Webhooks; CRUD services, PostgreSQL; ngrok tunneling; Raspberry Pi; RAG pipelines; lightweight OCR; Predictive analytics.