

NeuroCampus Unified AI Campus Operating System

Department of Computer Science and Engineering (AI & ML)

Project Overview

NeuroCampus Unified AI Campus Operating System is an industry-grade, AI-powered platform designed to automate and manage campus operations including face recognition attendance, BLE-based presence tracking, complete college management system (CMS), CO attainment automation, AI-powered interviews, coding analytics, student performance prediction, secure payment processing, and centralized academic analytics. The system is built using a scalable Django backend and modern cloud infrastructure to support real-time usage for approximately 500 users.

Deployment Platform

The project backend is deployed using a managed cloud hosting service with production-grade reliability, security, and scalability. The frontend is deployed separately using a CDN-based hosting platform to ensure fast global access.

Backend Hosting Configuration

- Platform: Render (Standard Web Service)
- Framework: Django (Production Deployment)
- Compute Resources: 1 vCPU, 2 GB RAM
- Availability: Always-on (No sleep mode)
- Security: Automatic HTTPS / SSL
- CI/CD: GitHub-based Continuous Deployment
- Configuration: Environment Variable Management
- Monitoring: Application Logs and Error Tracking
- Domain: Custom Domain Support
- Capacity: Suitable for ~500 concurrent users

Monthly Cost: USD 25

Database Configuration

- Database Type: Managed PostgreSQL
- Storage Capacity: 5 GB
- Usage: Student records, attendance logs, AI interview results, coding analytics, payments, system metadata
- Data Persistence: Yes

- Security: SSL-secured database connections
- Backup: Automated periodic backups
- Scalability: Storage and performance can be upgraded as required

Monthly Cost: USD 7

Cost Summary

Component	Monthly Cost (USD)
Render Standard Web Service (Django Back-end)	25
Render Managed PostgreSQL (5 GB Storage)	7
Total Monthly Cost	32

Conclusion

The proposed deployment configuration provides a cost-effective, scalable, and production-ready cloud infrastructure for hosting the NeuroCampus Unified AI Campus Operating System. With a total estimated cost of approximately USD 32 per month, this setup ensures high availability, data security, automated backups, and sufficient performance to support academic, administrative, and AI-driven modules required by the Department of CSE (AI & ML).

Submitted by:
NeuroCampus Project Team