

# Swalpesh Swapnil Kotalwar

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## EDUCATION

**M.S. in Computer Science** | Cleveland State University | Cleveland, USA  
**B.E. in Computer Engineering** | Savitribai Phule Pune University | Pune, India

Expected Dec 2026  
May 2019 - June 2023

## TECHNICAL SKILLS

**Functional:** Full-Stack Web Development, Backend Software Development, Web Application Architecture, REST API Development, Database Design & Management, Cloud-Based Application Deployment (AWS)

**Data Structures & Algorithms:** Arrays, Hash Tables, Linked Lists, Trees, Graphs, Recursion, Sorting, Time & Space Complexity

**Languages:** JavaScript (ES6+), SQL (MySQL), Bash (Shell Scripting), Python (basic)

**Frameworks & Libraries:** React.js, Node.js, Express.js

**Cloud Technologies:** AWS (EC2, S3, IAM, Linux-based deployments, basic networking)

**Tools & Platforms:** Git, GitHub, GitLab, Linux, Nginx, PM2, Postman, VS Code

**Software Engineering:** Object-Oriented Design, RESTful Architecture, Authentication & Authorization, Error Handling, System Scalability

**Operations:** Production Monitoring, Debugging, Log Analysis

**Relevant Coursework:** Data Structures & Algorithms, Operating Systems, Database Systems, Computer Networks, Software Engineering

## PROJECTS

### IoT Project – Smart Electricity Monitoring, Power Factor Optimization & Alerting System

**Tech:** JavaScript (ES6+), React.js, Node.js, Express.js, MySQL, AWS, MQTT, Linux, Nginx, PM2

- Built a **production grade fullstack IoT platform** enabling realtime electricity monitoring and PF optimization at scale for industrial systems.
- Supported **real-time monitoring across 20+ industrial installations** with reliable, fault-tolerant, and secure data ingestion pipelines.
- Developed **scalable REST APIs** using Node.js and Express.js to process high-throughput telemetry data via MQTT messaging.
- Implemented **secure device authentication mechanisms** using device IDs and topic-level authorization for trusted data flow.
- Designed **optimized MySQL data models** for time-series energy data and efficient historical trend analysis.
- Deployed the system on **Linux servers** using Nginx and PM2 for stable, secure, and reliable production operation.
- **Live Deployment:** <https://ipqsoms.com/> | **GitHub:** [Frontend](#) | [Backend](#)

### CRM Application – Multi-Department Lead Management & Business Workflow Platform

**Keywords:** JavaScript (ES6+), React.js, Node.js, Express.js, MySQL, Linux, REST APIs

- Built a **production-ready full-stack CRM system** for end-to-end lead lifecycle management and cross-department business workflows.
- Implemented **role-based access control (RBAC)** with hierarchical roles enabling secure, department-wise lead access control.
- Developed a **centralized lead management engine** for lead creation, assignment, conversion, and lifecycle state transitions.
- Implemented a **comprehensive lead activity timeline** tracking ownership changes, follow-ups, and associated business documents.
- Designed **optimized MySQL database schemas** and built scalable REST APIs using Node.js and Express.js services.
- **Live Deployment:** <https://crm.ipqspl.com/login> | **GitHub:** [Frontend](#) | [Backend](#)

### Vehicle Authority Project – QR-Based Commercial Vehicle Certification System

**Keywords:** JavaScript (ES6+), React.js, Node.js, Express.js, REST APIs, Linux, Cloud Deployment

- Built a **QR-based vehicle certification system** to enforce government compliance for commercial vehicle regulations.
- Developed a **full-stack application** using React.js and Node.js for sticker registration and vehicle data management.
- Implemented **QR code generation and digital certificate issuance** with automated 1-year compliance validity.
- Deployed the application on a **Linux cloud server** for reliable field usage and inspection verification.
- **GitHub:** <https://github.com/swalpesh/Marclavis-Project>

## WORK EXPERIENCE

### Front Desk Assistant – Office of Disability Services | Cleveland State University

Sep 2025 - Present

- Managed exam scheduling and accommodations for students, ensuring compliance with accessibility policies.
- Proctored accommodated exams while maintaining academic integrity and confidentiality.
- Coordinated with students and faculty to resolve scheduling and administrative issues.

### Full Stack Web Developer | Encoding Solutions Private Limited

May 2023 - Dec 2024

- Designed and developed **scalable full-stack web applications** using React.js, Node.js, Express.js, and MySQL for client-facing and internal systems.
- Built and maintained **RESTful backend APIs** with proper validation, authentication, error handling, and role-based access control (RBAC).
- Designed and optimized **MySQL database schemas**, wrote complex queries, and improved performance through indexing and query tuning.
- Deployed applications on **Linux cloud servers**, managing production configurations, environment variables, and runtime processes.
- Configured **Nginx** as a reverse proxy and used **PM2** for application process management and reliability.
- Collaborated with cross-functional teams to translate business requirements into **maintainable and production-ready software solutions**.