THANUSH BD

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PROFESSIONAL SUMMARY

Full-Stack Software Engineer with 2+ years of experience building scalable web and mobile applications serving 1000+ users across construction, environmental monitoring, and defense sectors. Expert in React, Flutter, Node.js, and Python with proven ability to design and deploy enterprise solutions reducing operational costs by 40%. Experienced in real-time monitoring systems, IoT integration, microservices architecture, and cloud infrastructure (AWS, Azure). Track record of delivering 5+ concurrent projects while coordinating with C-level stakeholders and cross-functional teams.

TECHNICAL SKILLS

- **Programming Languages:** Python, JavaScript (ES6+), TypeScript, Java, SQL, Dart, HTML5/CSS3, C
- **Frontend Technologies:** React.js (Hooks, Context API, Redux), Angular, Flutter, Material-UI, Responsive Design
- **Backend Technologies:** Node.js, Express.js, Django, Flask, RESTful APIs, GraphQL, WebSockets, Microservices
- **Databases:** PostgreSQL, MongoDB, MySQL, Database Design, Query Optimization, ORM (Mongoose, Django ORM, SQLAlchemy)
- **Cloud & DevOps:** AWS (EC2, S3, RDS, Lambda), Azure, Docker, Kubernetes, Git/GitHub, CI/CD, Heroku, Nginx
- **Tools & Practices:** Agile/Scrum, Test-Driven Development, System Design, Performance Optimization, Postman, Jira
- **Specialized Skills:** Machine Learning (PyTorch, TensorFlow, scikit-learn), IoT Integration, Real-time Systems, Computer Vision

PROFESSIONAL EXPERIENCE

Full-Stack Developer — Ecologic Engineering Private Limited *Oct 2024 – Present*
Bengaluru, India

- Architect and lead development of 5 enterprise applications serving 500+ daily users, reducing manual processes by 60% and improving operational efficiency by 40% across construction and environmental monitoring sectors
- **Construction & Environmental Management System (CEMS):** Engineered real-time monitoring platform processing 10,000+ daily sensor readings across 15 construction sites
  - Built scalable RESTful APIs using Node.js/Express handling 500 concurrent connections with 99.9% uptime
  - Implemented real-time data pipeline using WebSockets and Socket.io, reducing compliance reporting time by 75%
  - Designed PostgreSQL database schema with optimized indexing and query patterns, improving performance by 60%
  - Integrated IoT sensors and ML models for automated anomaly detection, preventing 20+ compliance violations
  - *Tech Stack: React.js, Node.js, PostgreSQL, Docker, AWS EC2, Socket.io, Python, IoT sensors*
- **Enterprise HRMS Solution:** Developed comprehensive HR management system with employee tracking, automated payroll processing for 200+ employees, and performance management dashboards, reducing HR administrative time by 50%
- **Treated Water Management System:** Created geolocation-based Flutter application similar to ride-sharing platforms for tracking treated water distribution across 25+ construction sites, optimizing resource allocation by 35%
- **Company Website:** Built responsive, SEO-optimized corporate website with custom CMS, increasing organic traffic by 120% and generating 50+ qualified leads within 3 months
- Serve as Project Coordinator under CEO supervision, managing timelines, resource allocation, and stakeholder communication for multiple concurrent projects, consistently delivering 20% ahead of schedule

Development Intern — L&T Precision Engineering (Defense Division) *Feb 2024 – Oct 2024*
Bengaluru, India

- Developed mission-critical client-server communication system using Modbus TCP/IP protocol, supporting 50+ concurrent device connections with sub-100ms latency for defense operations
- Engineered real-time data visualization dashboard for chemical agent detector using Angular and Python, processing and displaying sensor data with 99.99% accuracy for mission-critical defense applications
- Built Angular-based project management system with role-based access control, reducing team coordination overhead by 35% and improving project delivery timeline tracking for 3 cross-functional teams
- Implemented secure authentication mechanisms and data encryption protocols complying with defense-grade security standards
- *Tech Stack: Angular, Python, Modbus TCP/IP, WebSockets, PostgreSQL, Tkinter*

Software Engineering Intern — Inventron Technologies *Aug 2022 – Sep 2022*
Bengaluru, India

- Developed heart disease prediction ML model using PyTorch, pandas, and NumPy, achieving 87% accuracy on test dataset and contributing to predictive healthcare technology platform
- Engineered "Smart Surveillance System for Construction Sites" using computer vision (OpenCV, YOLO) and deep learning to detect PPE compliance violations in real-time with 92% precision
- Implemented automated alert system for safety violations, reducing incident response time by 65%

KEY PROJECTS

Environmental Audit Form (EAF) — Full-Stack Environmental Compliance Platform

- Designed and developed comprehensive digital transformation solution replacing India's paper-based Form V environmental audit workflow with an intelligent, automated compliance system used across pharmaceutical, chemical, and manufacturing industries
- **Multi-Tenant Architecture:** Implemented company management system with category-based configurations (RED/ORANGE/GREEN/WHITE industries) aligned with Ministry of Environment, Forest & Climate Change regulatory standards
- **Environmental Monitoring Suite:** Built comprehensive tracking for water, air, waste, energy consumption, and compliance metrics with real-time alerts for regulatory deadlines and violations
- **Performance Optimization:** Implemented Redis caching reducing repetitive queries by 60%, designed efficient aggregation pipelines for real-time environmental analytics, and added optimized pagination with indexing for large datasets
- **Security & Compliance:** Implemented JWT-based authentication, authorization layers, comprehensive audit logs, and designed data models aligned with MoEFCC regulatory standards
- **Document Management:** Built multi-format export system supporting PDF, DOCX, Excel, CSV with automated template generation for regulatory submissions
- *Tech Stack: Node.js, Express.js, PostgreSQL, Redis, React.js, JWT, TensorFlow, OCR, NLP, AWS*

Prestige Park Groove — Construction Monitoring Platform

- Developed cross-platform Flutter application monitoring 25+ construction sites with real-time IoT sensor integration tracking water consumption, waste generation, and environmental compliance metrics
- Architected microservices backend using Node.js/Express with MongoDB, supporting 200+ concurrent users and processing 50,000+ daily transactions
- Implemented ORM with Mongoose for type-safe database operations, reducing query errors by 90% and development time by 40%
- Built cloud-based analytics dashboard with interactive data visualization, reducing compliance reporting time from 4 hours to 15 minutes
- Deployed TensorFlow ML models for predictive maintenance and anomaly detection, preventing 15+ equipment failures
- **Impact:** Reduced water waste by 30%, improved compliance documentation efficiency by 80%, decreased manual data entry by 95%
- *Tech Stack: Flutter, Node.js, Express.js, MongoDB, Mongoose ORM, AWS (EC2, S3), TensorFlow, Docker, Socket.io*

Smart Surveillance System — AI-Powered Safety Monitoring

- Engineered automated safety monitoring system using computer vision (YOLO v5, OpenCV) to detect PPE compliance (hard hats, safety vests, gloves) with 92% accuracy across multiple camera feeds
- Implemented real-time alert mechanisms and automated reporting, reducing safety violation response time by 65%
- Integrated with existing security infrastructure using RESTful APIs, enhancing worker protection for 500+ construction site personnel
- Developed analytics dashboard showing compliance trends and violation patterns, enabling proactive safety improvements
- *Tech Stack: Python, YOLO v5, OpenCV, TensorFlow, Flask, PostgreSQL, Docker*

Laser-based Perimeter Fencing — Wildlife Conflict Prevention System

- Designed automated perimeter protection system using laser-based detection and PIR sensors to mitigate human-elephant conflicts in rural areas
- Developed IoT sensor network with Arduino and Raspberry Pi for early detection, achieving 95% detection accuracy within 50-meter range
- Created Flutter mobile application with Firebase real-time database and Google Maps integration for instant alert notifications to 100+ local residents
- Implemented SMS and push notification system with location tracking, reducing wildlife conflict response time by 80%
- *Tech Stack: Flutter, Firebase, Google Maps API, Arduino, Raspberry Pi, Python*

EDUCATION

Bachelor of Engineering in Computer Science *Graduated: Aug 2024*
Malnad College of Engineering, Karnataka, India CGPA: 7.3/10
Relevant Coursework: Data Structures & Algorithms, Database Management Systems, Operating Systems, Computer Networks, Software Engineering, Machine Learning, Cloud Computing, Web Technologies

CERTIFICATIONS & TRAINING

- **Machine Learning Specialization** – Inventron Technologies (2022)
- **Google Data Analytics Professional Certificate** – Google (Coursera)
- **Google Cyber Security Certificate** – Google (Coursera)
- **AWS Cloud Practitioner** – Self-study (In Progress)

ACHIEVEMENTS

- Delivered 5 concurrent enterprise projects 20% ahead of schedule while maintaining 95% code quality metrics
- Reduced cloud infrastructure costs by 35% through strategic AWS to Azure migration and resource optimization
- Implemented CI/CD pipeline and automated testing framework, reducing bug detection time by 60% and deployment time by 75%
- Mentored 2 junior developers, improving their code quality and productivity by 40%