Marish **Lakshmanan**

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🖼 https://marish-portfolio.vercel.app/ | 🌐 https://github.com/MarishLakshmanan

EDUCATION

Worcester Polytechnic Institute (WPI), *Worcester, MA*
Master of Science in Computer Science **GPA 4/4** *Aug 2026*
Dr. MGR Educational and Research Institute *Chennai, IN*
B.TECH in Computer Science and Engineering **CGPA: 8.69/10** 2019 Sept- *Aug 2023*

EXPERIENCE

Research Assistant, Worcester Polytechnic Institute, US *April 2025 – Present*
- Architected and developed cloud-backed healthcare platforms using **Next.js**, **AWS**, **SQL/NoSQL**, enhancing system responsiveness by 40%.
- Built scalable APIs, managed AWS deployments, and optimized database operations, applying strong problem-solving skills to meet research goals.
- Implemented CI/CD pipelines (Docker, AWS CLI) and ensured seamless production deployments across Linux environments.

Full Stack Developer Intern, Veryx Technologies, Chennai, IN. *Feb 2023 – Nov 2023*
- Researched and deployed OpenShift on-premises after prior team failures, enabling vTAP development resumption and earning CTO recognition.
- Decrypted dynamic NetFlow v10 packets leveraging Wireshark analysis and NetFlow documentation, increasing CloudMon's monitoring accuracy by 25%.
- Designed a high-throughput SQL optimization algorithm, achieving stable real-time processing of 10,000+ packets/sec for network traffic analysis.
- Mentored 10 interns during an onboarding project to build a MERN stack system monitoring app, demonstrating technical leadership and full-stack expertise.

Freelance Developer, Thanikai, (Live Demo of Demo Version: https://thanikai.netlify.app/): *Feb 2022 – April 2022*
- Built a secure MERN stack dashboard for social auditors, managing 500+ survey records and integrating a payment gateway for streamlined operations.
- Increased auditors' workflow efficiency by 50% by tailoring the platform to their specific data-tracking and management needs through close collaboration.

Freelance Developer, Gomathy Dairy farm (E-commerce Application), (https://marish-portfolio.vercel.app/work)**:** *Jun 2020 – Aug 2020*
- Built real-time Android-based e-commerce apps with mobile number login and Firebase backend, enabling 200+ daily order management and inventory updates.

PROJECTS

Symptriage (GitHub: https://github.com/Vinayakrevankar/Symptriage):
- Co-developed an ML application that uses **Natural Language Processing (NLP)** to analyze user symptoms, predict potential diseases, and suggest medications, streamlining preliminary evaluations for healthcare providers.
- Reduced clinical assessment time by **30%** by automating initial diagnosis processes using Python-based **ML** models integrated with **Django** and **React** interfaces.

SonicSync (GitHub: https://github.com/MarishLakshmanan/SonicSync):
- Developed an ML-driven music personalization app using CNNs to recommend optimized equalizer settings based on headphone models and audio genre classification.
- Built with **Python**, **React.js**, and **Flask**, improving music genre prediction accuracy by **90%**.

ERD2SQL (GitHub: https://github.com/MarishLakshmanan/ERD2SQL):
- Created a dynamic ERD-to-SQL generator with **React Flow**, **Node.js**, and live schema synchronization, automating database schema design and validation.

Colon (Live Demo: https://angular-7bf43.web.app):
- Built a real-time collaborative chat platform with an integrated code compiler using **Angular.js, Firebase, and TypeScript**, enabling code sharing and execution within conversations.

Spyder (GitHub: https://github.com/MarishLakshmanan/Spyder)**:**
- Automated website QA processes by building a crawler that detects console errors and captures screenshots, leveraging **Python, Flask, Selenium, BeautifulSoup**.

Buzzz.live (GitHub:https://github.com/MarishLakshmanan/Buzz.live)
- Created a synchronized video chat and collaborative whiteboard app using **React.js, Node.js, Socket.io,** and **MongoDB,** enhancing user engagement during remote sessions

Student Lifecycle Monitor (GitHub: https://github.com/MarishLakshmanan/Student-lifecycle-monitor)**:**
- Built a productivity-focused mobile app using **React Native**, **Firebase**, and **JavaScript**, featuring assignment tracking, task scheduling, and quick notes for students.

SKILLS

Languages: C/C++, Java, JavaScript, TypeScript, Python, Bash, SQL, NoSQL
Frameworks: React.js, Next.js, Angular.js, Node.js, Django, Flask, React Native, Expo, FastAPI
Tools & Platforms: AWS, Azure, Docker, OpenShift, Kubernetes, Linux, Firebase, MySQL, MongoDB, Postman, GitHub, Swagger, Figma

Technologies: Machine Learning (NLP, CNNs), REST API Design, Cloud Architecture, MERN/MEAN Stacks, Full-stack Development, DevOps Practices

ACTIVITIES

Head, MGR Mozilla Club (A club to implement innovative Ideas) *2022-2023*
Head of Technical Committee, Techastra'22 *July 2023 - Sept 2023*