Nilushan Silva

Full Stack and Cloud Engineer

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PROFILE

Full Stack Software Engineer & Cloud Solutions Developer with 15+ years delivering robust, high-quality software. Specialized expertise includes 7+ years in TypeScript/React development and 6+ years architecting solutions on Google Cloud Platform. Proven track record in service-oriented architecture, large-scale IoT integrations, and DevOps practices with consistently high uptime achievement. Excel at analyzing requirements and designing solutions through collaboration, diagramming, and documentation. Passionate about implementing engineering best practices to create well designed, testable, reliable, maintainable, and cost-efficient systems.

TECHNICAL SKILLS

Programming	TypeScript, JavaScript, Node.js, Java, C#, C++, PHP
Frontend	React, Redux, Bootstrap, HTML5, CSS3, Chart.js, Socket.IO
Backend	Express, Fastify, REST APIs, Event-Driven Architecture, Service-Oriented Architecture
Databases	PostgreSQL, MySQL, Firestore, MongoDB, Redis, TimescaleDB, ClickHouse
GCP Cloud	Actively used. Kubernetes, Cloud Functions, Compute Engine, IoT Core, PubSub, Cloud storage, Monitoring, Firebase, Container Registry, Cloud Build, Scheduler, Monitoring, Trace, IAM,
GCP Cloud	Familiar with. App Engine, Cloud Run, Big Query, Big Table,
AWS Cloud	Familiar with. Lambda, Kinesis, IoT Core, S3, DynamoDB, SNS, SQS, Pinpoint, EKS, Fargate,
Azure Cloud	Familiar with. App Services, IoT Core, Event Hub, Cosmos DB, ADX
DevOps	Docker, Kubernetes, CI/CD, Google Cloud Build, GitHub Actions, Git, SVN
Tools	Jira, Confluence, ClickUp, Draw.io, Lucid Charts (UML), Axure RP 9, Illograph, Mermaid, C4 Diagrams

EXPERIENCE

Full Stack & Cloud Engineer — October 2017 – Present

Zimi Ltd, Goldcoast, Queensland, Australia

- **Platform Migration:** Successfully migrated cloud IoT platform with 55,000+ active devices from Xively to GCP with zero downtime, reducing infrastructure costs by 50% and latency by 40% while maintaining 99.999% uptime
- **Architecture:** Designed end-to-end IoT platform for smart electrical devices handling 100+ events/second with secure device communication protocols
- **Cloud Infrastructure:** Built service oriented architecture on GCP using Kubernetes, Cloud Functions, Redis, PubSub, Cloud Sql(PostgreSQL) for optimal scalability and resilience
- **Frontend:** Developed React/Redux admin dashboards with dynamic visualizations for IoT device network monitoring and management
- **Backend Development:** Created high-performance REST APIs and event-driven services using Node.js / TypeScript with comprehensive documentation, diagramming, and testing

- **Voice Integration:** Engineered and certified Google Assistant and Alexa voice control systems, expanding product ecosystem compatibility
- **Code Efficiency:** Created reusable, unit tested TypeScript/Node.js libraries containing common functionality, reducing development time by more than 50%
- **DevOps:** Setup automated CI/CD pipelines with Docker, Google Cloud Build, GitHub Actions, Container Registry, Kubernetes for seamless multi-environment deployments
- **Knowledge Transfer:** Documented the entire system architecture and conducted comprehensive knowledge sharing sessions covering system components and business processes to facilitate seamless transition
- **Solution Design:** Diagrammed and documented solutions, interfaces, and test cases thoroughly before implementation, leading to high-quality, well-designed components
- **System Modernization:** Proactively planned system improvements by selecting and collaborating with a third-party software company to develop a scalable system capable of handling millions of devices, telemetry data, analytics, and insights
- **Platform Evaluation:** Experienced in evaluating software tools and platforms to select optimal solutions for specific use cases

Product Manager **January 2015 – June 2017**
Simcentric, Colombo, Sri Lanka

- **Leadership:** Directed development of 5 new simulation products used by military training organizations
- **Team Management:** Led cross-functional teams (10 engineers, 5 QA specialists) in delivering complex software projects
- **Complex Delivery:** Successfully implemented challenging screen capture and real-time streaming features, overcoming significant R&D obstacles

Software Engineer **November 2010 – December 2014**
Simcentric, Colombo, Sri Lanka

- **Simulation Development:** Built core components for military training simulation products using C++
- **Scenario Engine:** Implemented Insurgent Pattern of Life Simulation for VBS2 Game engine scenarios

Software Engineer **August 2008 – November 2010**
Respere, Colombo, Sri Lanka

- **Open Source:** Developed web software for human rights violations recording using PHP and MySQL
- **SaaS Implementation:** Designed 'OpenEvSys' as a secure multi-tenant platform with international hosting options

PROJECTS

Enterprise IoT Cloud Platform Migration 2017-2020
Researched, designed, implemented, tested and deployed and migrated a IoT system of 55,000+ IoT devices to GCP using a service oriented architecture with zero downtime. Achieved 99.999% uptime while handling 100+ events/second. Switched backends, databases, users, physical devices, voice assistant integrations of a live system. Implemented secure device communication and real-time control systems, reducing operational costs by 50% while increasing system reliability.
Technologies: GCP, Kubernetes, Firebase (Auth, Store, Messaging), IoT Core, PubSub, PostgreSQL, Redis, Mqtt, TypeScript, React, Redux, Express, Fastify

Smart Home Voice Control Ecosystem 2019-2021
Architected, implemented, tested voice-control integrations for Google Assistant and Alexa. Developed unified business logic with platform-specific adapters ensuring consistent behavior across ecosystems. Successfully navigated certification processes for both platforms, expanding product market reach.

Technologies: TypeScript, Express, OAuth, AWS Lambda, Google Actions API, Alexa Smart Home API, Realtime reporting state

IoT Network Management Dashboard 2018-2022
Developed comprehensive web-based platform for IoT device network management and monitoring. Created interactive data visualizations for device telemetry, usage patterns, and iot device health metrics.
Technologies: React, Redux, TypeScript, Bootstrap, Chart.js

EDUCATION

Bachelor of Science in Computer Science (Honours) **2004 – 2008**
University of Colombo, Sri Lanka

PROFESSIONAL DEVELOPMENT

- Currently studying AWS architecture and services with the aim of obtaining certification
- Self-directed continuous learning in cloud architecture, microservices, and emerging technologies

PROFESSIONAL INTERESTS

- **AI & LLMs:** Leveraging LLMs, AI Agents, and AI-based coding assistants to accelerate development while maintaining high quality through effective prompting, providing latest documentation, and contextual information
- **Diagramming & Documentation:** Advanced visualization tools like Illograph, Mermaid, and C4 diagrams for clear technical communication
- **Emerging Technologies:**
  - **Dapr:** Distributed Application Runtime for simplified microservice development with built-in service discovery, state management, PubSub messaging, and observability
  - **Next.js:** For integrated frontend and backend systems in smaller projects
  - **Supabase:** Open source, self-hosted or managed essential services for web applications

LANGUAGES

English Professional working proficiency