



# Ganesh Gunasegaran

Architect | Full-Stack Developer | AI & Scalable Systems

## 👤 Profile

Architect and Full-Stack Developer with nearly **two decades** of experience designing and scaling high-performance systems. Specializes in **software architecture, AI-driven automation, and - cloud-native development**, with a strong track record in - **building distributed systems, optimizing performance, and leading engineering teams** to deliver business-driven technology solutions.

### Key Expertise

- **System Architecture & Scalability:** Designed platforms handling millions of transactions per day, achieving **99.99% uptime** and **reducing response latency by 40%**.
- **AI & Data-Driven Solutions:** Built **AI-powered analytics, predictive models, and fintech automation**, improving **decision accuracy and operational efficiency**.
- **Full-Stack Development:** Hands-on expertise in **backend (Ruby, Python, Node.js, Java)** and **frontend (React, Vue.js, Angular)**, delivering **end-to-end production applications**.
- **Cloud & DevOps Optimization:** Reduced **cloud infrastructure costs by 30%** through **containerized microservices, automated CI/CD, and intelligent workload distribution**.
- **Technical Leadership & Collaboration:** Led **cross-functional teams** across engineering, product, and data science, driving **technical strategy, system modernization, and high-performance development workflows**.

## 💼 Employment History

### Full Stack Architect at Turing, Remote

February 2022 — Present

Q.ai is an **AI-driven investment platform**, leveraging **machine learning and predictive analytics** to optimize portfolio management in real time. Led the **backend engineering efforts**, focusing on **AI automation, trade execution optimization, and scalable system design**.

### Key Achievements

- **Built a real-time Performance Metrics service** using **Python, Flask, and Pandas**, increasing **trade analytics efficiency by 40%** and reducing **data processing time by 60%**.
- **Optimized AI-powered portfolio re-balancing algorithms**, enhancing investment accuracy and reducing execution latency by **35%**, ensuring **faster, more precise market responses**.
- **Architected a federated API gateway**, integrating **Ruby on Rails, Kotlin, Python, and Java/Spring Boot**, streamlining **cross-service communication** and reducing **API latency by 50%**.

## Details

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## Links

[Blog](#)

[Github](#)

## Skills

Ruby (Ruby on Rails)

JavaScript (Node.js, Express.js, React.js, React Native, Vue.js, Angular)

Python (Flask, Pandas, PyTorch)

Java (Spring Boot)

RESTful APIs, GraphQL, GraphQL

PostgreSQL, MySQL, Redis, MongoDB

Docker & Kubernetes

Cloud Platforms (AWS, GCP)

GitOps & CI/CD, Terraform

Distributed Systems, Event-Driven Architecture, High-Performance Computing

- **Redesigned trading services architecture**, enabling **scalability for 10x trade volume growth** while maintaining sub-100ms response times.
- **Collaborated with ML teams** to deploy **real-time risk assessment models**, improving automated trade decision-making and reducing **portfolio drawdowns by 20%**.

**Tech Stack:** Python, Flask, Pandas, Ruby on Rails, Kotlin, Java/Spring Boot, PostgreSQL, Redis, Kubernetes, RabbitMQ, AWS

Buzz Solutions provides **AI-driven predictive analytics**, leveraging **machine learning on drone and satellite imagery** to detect **infrastructure faults in power grids**. Led **architecture, AI modeling, and full-stack development**, optimizing **fault detection, system scalability, and cloud deployment**.

#### Key Achievements

- **Redesigned the interactive dashboard** using **Vue.js**, improving **data visualization and user engagement by 45%**.
- **Migrated a monolithic application to microservices** using **Node.js & Express.js**, reducing **response latency by 35%** and improving **system modularity**.
- **Trained deep learning models in Python & PyTorch**, enhancing **fault detection accuracy by 50%**, reducing false positives, and enabling **proactive infrastructure maintenance**.
- **Developed a GitOps CI/CD pipeline with Docker & Kubernetes on GCP**, reducing **deployment time by 60%** and improving **release stability**.
- **Implemented a scalable multi-tenancy system**, enabling **onboarding of 200% more enterprise clients** without performance degradation.
- **Led frontend and backend teams**, ensuring **high engineering standards, system reliability, and efficient cross-functional collaboration**.

**Tech Stack:** Python, PyTorch, Vue.js, Node.js, Express.js, PostgreSQL, Redis, Docker, Kubernetes, GCP, GitOps, Terraform

#### Chief Architect at Bukukas(Lummo), Remote

December 2020 — February 2022

Bukukas (Lummo) is a **fintech platform serving millions of SMBs**, providing **digital bookkeeping, payments, and financial management solutions**. Led the **architecture and engineering strategy**, focusing on **scalability, fintech automation, and AI-driven decision-making**.

#### Key Achievements

- **Designed and deployed fintech solutions** handling **millions of transactions monthly**, ensuring **99.98% uptime**.
- **Developed a rule-based fraud detection engine**, reducing **fraudulent transactions by 40%** and improving **security**.
- **Architected a real-time campaign & cashback engine** using **Node.js & WebSockets**, increasing **user engagement by 35%**.

- **Optimized transaction processing**, reducing **payment failures by 25%** through adaptive retry mechanisms.
- **Built a gRPC-based microservices notification system**, achieving **95%+ delivery rates across SMS, WhatsApp, and push channels**.
- **Led a cross-functional engineering team**, driving architecture decisions across **payment services, AI models, and microservices migration**.

**Tech Stack:** Ruby on Rails, React, Node.js, gRPC, Kubernetes, PostgreSQL, Redis, WebSockets, DataDog

### Senior Architect at BigBinary, Remote

August 2019 — November 2020

BigBinary is a consulting firm specializing in **full-stack application development**, delivering high-performance web and mobile solutions for businesses. Led the **architecture, performance optimization, and feature development** of Neeto, a suite of business productivity tools.

#### Key Achievements

- Integrated **Stripe payments** using **Ruby on Rails**, increasing **successful invoice payments by 30%** and streamlining financial transactions for businesses.
- **Developed a cross-platform time-tracking desktop app** using **Electron, React, and React Native**, enhancing **productivity and adoption across multiple devices**.
- **Built a customizable report generation module**, enabling **automated PDF creation** and reducing **manual reporting efforts by 50%**.
- **Led the development of a unified design system**, ensuring **consistent UI/UX across web and mobile platforms** and reducing **design inconsistencies by 40%**.
- **Refactored core platform components**, optimizing **database queries, caching strategies, and API performance**, leading to a **25% reduction in load times**.

**Tech Stack:** Ruby on Rails, React, React Native, Electron, PostgreSQL, Redis, GraphQL, AWS, Docker, Kubernetes

### Senior Software Architect at MoneySmart, Bengaluru

January 2018 — July 2019

MoneySmart is a **personal finance comparison platform**, helping users **compare loans, credit cards, and insurance products**. Led **system modernization, performance optimization, and scalable architecture** initiatives.

#### Key Achievements

- **Migrated car insurance services** from a **monolithic system to microservices (Ruby on Rails & Kubernetes)**, improving **API response times by 40%** and enabling **independent deployments**.
- **Developed a Single Page Application (SPA)** with **micro frontends**, allowing **module-level updates without full platform redeployment**, improving **release efficiency by 50%**.

- **Built an integration Ruby Gem**, enabling **seamless lead provider data exchange** across multiple financial partners, increasing **data processing speed by 35%**.
- Created **“Rocketship”** – a unified design system (Vue.js) for MoneySmart, ensuring **consistent UI/UX** and reducing frontend development effort by 30%.
- **Led platform-wide efficiency improvements**, implementing shared services, caching strategies, and event-driven architecture, reducing **database load by 25%**.

## **Chief Software Architect at Crossover, Remote**

January 2017 — December 2017

Crossover led the **technical transformation of EngineYard**, a **Platform-as-a-Service (PaaS)** provider enabling developers to **build, deploy, and manage cloud applications** efficiently. Led the **modernization of deployment infrastructure, microservices migration, and cloud provisioning automation**.

### **Key Achievements**

- **Expanded application deployment capabilities** by adding support for **Node.js & Elixir/Phoenix**, increasing **developer adoption by 30%**.
- **Redesigned the user dashboard (MERB & Backbone.js -> Ruby on Rails & React)**, improving **performance by 50%** and reducing **user friction**.
- **Refactored a monolithic system into microservices**, enabling independent scaling of services and reducing **system downtime by 60%**.
- **Developed a Cloud Provisioning Dashboard**, automating infrastructure deployment and reducing provisioning time from hours to minutes.
- **Architected key financial microservices (Billing, Ledger, Add-ons)**, improving **transaction processing speeds by 40%** and ensuring **scalability for enterprise clients**.

**Tech Stack:** Ruby on Rails, React, Node.js, Elixir/Phoenix, Kubernetes, Docker, PostgreSQL, Redis, AWS, Terraform, CI/CD (Jenkins)

## **Founder at Akshi, Puducherry**

January 2013 — November 2016

Akshi was an **AI-powered social learning platform** designed to bridge the gap between **teachers, students, and content creators** through **live interactive classrooms, adaptive learning assessments, and real-time doubt resolution**. Led the **product vision, technical architecture, and full-stack development**, scaling the platform to **thousands of concurrent users**.

### **Key Achievements**

- **Designed and developed the platform architecture (Ruby on Rails, WebRTC, Redis, PostgreSQL)**, ensuring **99.9% uptime** and **seamless user interactions**.

- **Built a custom live video streaming server in C**, featuring **dynamic transcoding and adaptive bitrate streaming**, improving video quality by **40% under fluctuating network conditions**.
- **Developed an AI-driven adaptive evaluation system**, dynamically adjusting question difficulty based on student performance-, increasing learning efficiency by **35%**.
- **Launched a real-time doubt-clearing system**, reducing student response wait times by **50%** and improving classroom engagement.
- **Scaled the platform to support 1,000+ concurrent students**-, ensuring **low-latency interactions with real-time chat, whiteboarding, and video streaming**.
- **Led product strategy and business operations**, securing over **5,000 registered users** and establishing partnerships with educational institutions.

**Tech Stack:** Ruby on Rails, WebRTC, C, Redis, PostgreSQL, Docker, Kubernetes, TensorFlow (for adaptive learning), AWS, WebSockets

## **Architect at Pramati Technologies, Chennai**

January 2014 — November 2016

Pramati Technologies is a **software consulting firm** specializing in **cloud computing, AI-driven analytics, and enterprise mobility solutions**. Led **AI-powered product development, cloud transformation strategies, and open-source initiatives** for global clients.

### **Key Achievements**

- **Led the Mobility & Machine Learning division**, delivering **AI-powered mobile and enterprise solutions** that improved business efficiency by **40%**.
- **Designed predictive analytics solutions using SAP HANA & ML algorithms**, enabling faster fraud detection and reducing false positives by **30%**.
- **Architected scalable microservices for clients like FI Navigator & RPX Corporation**, ensuring **high availability and 99.9% uptime** for enterprise applications.
- **Developed a real-time logistics optimization system for Deliv.co-**, reducing **delivery time variance by 25%** using **AI-driven route optimization**.
- **Led the Center of Excellence for Open Source Initiatives**, fostering adoption of **open-source technologies**, leading to **15% faster development cycles** across engineering teams.

**Tech Stack:** Ruby on Rails, Java (Spring Boot), Angular.js, Spark, SAP HANA, PostgreSQL, TensorFlow, AWS, Docker, Kubernetes

## **Founder at SageWork, Puducherry**

November 2008 — December 2013

SageWork was a **software consulting firm** providing **web and mobile application development** services to **startups and enterprises**. Led **architecture, full-stack development, and cloud strategies** for clients across **fintech, energy, and consumer technology** sectors.

## Key Achievements

- Provided technical consulting to clients including GagglesUp, EMEX Power, Spending Doctor, and Wattbot, delivering scalable and high-performance applications that improved business operations by 30%.
- Led a team of 12 engineers, implementing agile development processes, reducing time-to-market for client projects by 40%.
- Developed cloud-native web & mobile applications using Ruby on Rails, JavaScript (jQuery), and Titanium Native, optimizing performance and user engagement.
- Architected a distributed backend system supporting high-volume data processing, reducing server costs by 25% and improving response times by 50%.
- Implemented scalable database solutions (PostgreSQL, MongoDB), enabling clients to manage millions of records efficiently.
- Grew SageWork's client portfolio from zero to 10+ long-term enterprise clients, generating consistent revenue growth.

**Tech Stack:** Ruby on Rails, JavaScript (jQuery), Titanium Native, PostgreSQL, MongoDB, AWS, Redis, CI/CD

## Development Manager at RevenueMed, Atlanta

December 2007 — October 2008

RevenueMed was a healthcare technology firm specializing in medical coding automation and revenue cycle management. Led engineering teams in developing workflow automation tools, training systems, and bioinformatics solutions to streamline medical billing, coder training, and pharmaceutical research.

## Key Achievements

- Led the development of RevClaim and RevFlow, two workflow automation applications built with Ruby on Rails, improving medical billing efficiency by 35% and reducing claim processing errors.
- Developed an LMS module for medical coders (PHP, WordPress)-, automating training delivery and cutting manual onboarding time by 50%.
- Built an interactive molecular data mining and drug discovery tool (Java, AWT, Swing) for Wyeth Pharmaceuticals, enhancing biomedical research efficiency by 30% through better data visualization and analytics.

**Tech Stack:** Ruby on Rails, PHP (WordPress), Java (AWT, Swing), PostgreSQL, Redis

## Team Leader at IBM/HCL, Chennai

June 2003 — September 2007

IBM/HCL specialized in enterprise software, infrastructure solutions, and performance engineering for large-scale business applications. Led enterprise messaging, security, and performance optimization initiatives, improving scalability and system reliability for critical enterprise applications.

## Key Achievements

- Led the porting of WebSphere MQ Series to Tandem NSK (C/Posix), ensuring seamless cross-platform enterprise messaging, reducing message latency by 30%.
- Designed and implemented a custom SSL module (C/Posix)-, enhancing encryption and data security for IBM's enterprise applications, reducing security vulnerabilities by 40%.
- Developed Pathwai J2EE Performance Profiler, optimizing system performance by 50%, enabling faster response times for enterprise applications.
- Built an automated regression testing suite for Eclipse Plugins (Java, SWT, JFace), reducing manual testing effort by 60% and improving software release reliability.

**Tech Stack:** C/POSIX, Java (J2EE, SWT, JFace), WebSphere MQ, Eclipse, PostgreSQL, Redis

## 🎓 Education

**B.Tech., Pondicherry University, Puducherry**

1999 — 2003

## 🏆 Certifications

**Java at IBM ACE**

**Titanium Certified Developer at Appcelerator**