

SWAPNIL SURDI

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Available to join immediately (visa transfer required)

Professional Summary

Senior Software Engineer with 9+ years of experience in building scalable backend systems, distributed services, and cloud infrastructure. Skilled in designing robust APIs, optimizing microservices, and driving cloud-native deployments. Strong background in secure communication protocols, networked systems, and AI-driven applications with focus on automation and performance optimization.

Core Competencies

- Microservices Architecture, API Design, System Integration, Performance Optimization
- Cloud Infrastructure (AWS), Containerization (Docker), AI-driven Systems
- Secure Communication Protocols, Wireless Connectivity, Network Optimization
- DevOps & CI/CD Implementation, Automation, Infrastructure Monitoring
- Technical Leadership, Code Review, Mentoring

Technical Skills

- **Languages:** Python, Go, JavaScript, TypeScript, Java, SQL
- **Frameworks/Tools:** Django, React, Spring Boot, Node.js, Kafka, RabbitMQ, Microservices
- **Cloud/Infrastructure:** AWS (ECS, Fargate, Lambda), Docker, GitHub Actions, Bitrise
- **Databases:** PostgreSQL, MongoDB, Redis, MySQL
- **AI/Systems:** Model Context Protocol (MCP) Server Development, AI Tool Integration, Machine Learning, Automation Frameworks
- **Methodologies:** Agile/Scrum, DevOps, CI/CD, Quality Management Systems
- **Network Technologies:** WiFi, Mesh Networks, Antenna Systems, Communication Protocols

Professional Experience

Treatment Technologies & Insights

- Senior Software Engineer
- Remote
09/2021 – 07/2025
- Architected ISO 13485 Quality Management MCP (AI assistant integration protocol) integrating Slack, GitHub, Google Drive, and Confluence as company-wide AI assistant for regulatory compliance, employee onboarding, and Scrum master functions, reducing onboarding time by 75%
 - Engineered comprehensive MCP Personal Assistant server transforming Claude Desktop into intelligent productivity suite with SQLite/TinyDB support, document management, and calendar integration, reducing project setup time by 80%
 - Implemented enterprise HIPAA-compliant Healthcare Data MCP with AI-powered health insights, automated survey capabilities, and secure patient data management for clinical applications
 - Contributed to open-source mcp-atlassian project, developing AI integration capabilities for enterprise collaboration tools
 - Architected microservices for real-time data processing and secure device communication
 - Engineered Patient portal website from scratch using React, creating a comprehensive healthcare platform that serves as the foundation for patient data management and clinical workflows
 - Delivered custom MRI viewer system, reducing image load times from 8 minutes to 30 seconds through performance optimization
 - Implemented responsive React interfaces and Node.js microservices for healthcare provider workflows, handling full-stack development independently with seamless frontend-backend integration
 - Established RESTful APIs for integration between backend services and client applications, reducing API calls by 30% and optimizing system latency
 - Established in-house electronic Quality Management System (eQMS) for regulatory document control with automated workflows using microservices architecture
 - Created Go-based automation framework to streamline backend validation workflows and reduce manual testing effort by 40%
 - Implemented containerization (Docker, AWS Fargate) to improve deployment efficiency and system scalability
 - Established CI/CD pipelines using GitHub Actions and Bitrise, reducing manual deployment overhead
 - Engineered event-driven logging and observability tools for automated issue detection and system health monitoring
 - Mentored junior engineers and led internal knowledge-sharing sessions on system design and cloud optimization

Beamlink Inc

- Research & Development Engineer
- Remote
05/2020 – 09/2021
- Designed disaster-resilient mesh network architectures using Python and OLSR protocol for bandwidth-constrained, power-sensitive applications
 - Conducted extensive testing and optimization of bidirectional vs. directional antenna configurations to maximize signal range while minimizing power consumption

- Developed algorithms for dynamic tower selection and node-hopping to maintain reliable connectivity in low-signal environments
- Developed power-efficient communication protocols for battery-operated devices with optimized sleep and transmission cycles
- Built simulation tools to test network performance and power efficiency
- Contributed to technical research resulting in the patent 'Fixed Base Station Antenna System using MIMO Configuration'

Independent Technical Consultant

Remote

Multi-Project Engagement

06/2018 – 06/2021

- Architected scalable dealership platform for Nissan Torso Car Dealership using Django (backend) and React (frontend), leading team of 3 engineers and implementing Agile methodologies
- Engineered experimental web platform for AI Study - Open Sesame Social Ties research, studying human trust in AI recommendations under resource scarcity, directly contributing to published research on intelligent assistants
- Delivered complete web presence solution for manufacturing business, providing end-to-end digital transformation
- Integrated advanced analytics dashboards and Monday.com CRM for enhanced customer engagement across projects
- Implemented secure authentication systems for customer portals and dealer services

USC Marshall Center for Global Supply Chain Management

Los Angeles, CA

Technology Specialist

03/2019 – 05/2020

- Managed website infrastructure, security implementations, and hosting environment optimization
- Provided technical support for conferences and events, ensuring seamless technology integration
- Implemented security protocols and disaster recovery procedures for critical web infrastructure

Apprely Technologies

Pune, India

Application Developer

10/2016 – 06/2018

- Developed Android apps and backend services with secure data pipelines using Kafka/RabbitMQ
- Built comprehensive financial automation platform for Entryless, integrating QuickBooks, Zoho Books, Intuit services, and Plaid APIs to enable automated receipt-to-accounting workflows for tax preparation and financial record management

Accenture Services Pvt Ltd

Pune, India

Associate Software Engineer

10/2015 – 10/2016

- Automated testing for Virgin Media UK, contributing to a 2-month manual effort reduction
- Received Accenture's 'Ace Award' for outstanding contributions to automation and process efficiency

Research Experience (USC)

Space Safety Research

2019 – 2020

- Contributed to blockchain research for space situational awareness, resulting in publication in Journal of Space Safety Engineering

USC Space Engineering Research Center

2019

- Contributed to lunar prototype and nanosatellite projects under Prof. David Barnhart

Distributed Systems Research

2019

- Contributed to Prof. Bhaskar Krishnamachari's research on search engine implementation for blockchains using Interplanetary File System

Education

- **University of Southern California** | M.S. in Astronautical Engineering

2018 – 2020

- **MIT, University of Pune** | B.E. in Electronics & Telecommunication Engineering

2011 – 2015

Certifications

- Lean Six Sigma Green Belt
- Monday.com Workflow Certifications

Patents & Publications

- **Patent:** "Fixed Base Station Antenna System using MIMO Configuration" US20240129000A1
- **Publication:** "Space Situational Awareness through Blockchain Technology" - Journal of Space Safety Engineering