

Shubham Singh

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Member of Technical Staff

Platform Engineering | Full Stack Development | DevOps | DevSecOps | SRE | AI/ML Ops

A visionary and resourceful engineer with over 5 years of experience driving innovation in both corporate and startup ecosystems. Expert in architecting robust software solutions, high-level and low-level system designs, infrastructure automation, and building highly scalable and resilient systems. Demonstrated leadership in platform engineering, advanced DevSecOps methodologies, and pioneering AI research initiatives. Proven ability in designing sophisticated AI-driven monitoring frameworks, anomaly detection systems, and autonomous remediation agents, addressing complex business challenges effectively and rapidly.

WORK EXPERIENCE

Salesforce, Inc. – Hyderabad, India.

Oct 2024 – Present

Member of Technical Staff – (Hybrid/Remote)

Empowering platform resilience and scale - owning software development, CI/CD pipeline optimisation, infrastructure automation, proactive monitoring & alerting, security hardening, performance tuning, incident diagnosis, and cross-team collaboration.

- Managed & maintained **800+ Kubernetes** clusters across hybrid cloud(AWS/Ali/GCP) and on-prem(SAM 1P) environments (RHEL 9.6+), ensuring 99.99% service availability.
- Streamlined CI/CD pipelines using **Terraform, Spinnaker, & ArgoCD**, achieving a **30% reduction** in deployment cycles.
- Enhanced observability and incident response by implementing **Grafana** monitoring dashboards and integrating with **Splunk**, reducing mean time to detect (**MTTD**) issues by **40%**.
- Oversaw critical infrastructure tasks, including **regular OS patching, kernel upgrades, and IPVS module rollouts** to optimize load balancing for on-prem systems.
- Designed and developed an advanced **AI agentic framework (Warden AI Ops)** enabling multi-tenancy, allowing tenants to build customized AI agents directly on top of this platform.
- Leveraged this framework to significantly enhance automated incident detection & remediation capabilities, achieving a **30% reduction** in incident resolution times, empowering tenants to innovate rapidly. Created agents like **weekly SQR report**; K8s Agent troubleshooting that uses **K8sGPT** to solve & auto heal the k8s related issues; **Pager Duty alert automation** to describe the alert & suggest remediation.
- Created Kubernetes Operators for automated self-healing workflows, **reducing manual intervention by approximately 40%**.
- Actively engaged in cross-team collaboration, contributing to **architecture design**, security assessments, quarterly reliability initiatives, and performance tuning.
- Building **Customer Engagement Framework (CEF)**, which remediates the Pager Duty alerts by intercepting the metrics and raising the same back to our tenants from the Argus queries, resulting in reducing the ops toil and burden for **unnecessary alerts by 30%**

Airtel International – Gurgaon, India.

May 2022 – Sep 2024

Site Reliability Engineer – (Hybrid/Remote)

Keeping the ship sailing! Responsible for software development, release, deployments, monitoring, automation(CI/CD), security, diagnosis for optimal performance, and supporting the IT infrastructure environment

- Achieved **Einstein Award** in the early span of joining the org & showcased the bar of excellent performance
- Directly managing a team of **3 engineers**, providing **guidance, technical resources, & skill development** to drive productivity & improve project outcomes
- Rolled out the base products & platforms of the organisation for **NPO** (Network Provisioning Orchestrator), **KYC 2.0**, **E-Sim**, & **CLM** (Customer Lifecycle Management) to 14 Countries
- Building a product which is indulging **AI/ML Ops** and catering to **anomaly detection, triage, & resilience**
- Built an **Affair System** using **MEAN, JAVA, & Python** which **automates** user-defined workflows & tasks, **Health-Checks, Recon, & RT Dash**. This system has reduced the current functional dependency by **70%**
- Orchestrating **200+ Micro-services** & their **CI/CD pipelines** using **K8s, Rancher, Flux & Jenkins**
- **Monitoring** and **Reporting** on Service Level Objectives (**SLOs**) for desired application services
- Optimising runtime **DB queries (SQL and NoSQL)** and generating custom metrics from **Grafana & Kibana**

Amway India – Gurgaon, India.

Jun 2020 – Apr 2022

DevSecOps Engineer – (Hybrid) (Jun 2021 – Apr 2022)

Responsible for development, deployments, and engaged with multiple activities to provide user a frictionless shopping experience. Worked as a Technical SEO Manager, Technical DevSecOps Engineer across various functional teams and as a Product Owner & Engineer to mitigate the production support incidents.

- Accomplished **10+** order journeys & developed scripts for **performance testing** using **headless chrome, Node.js, Influx DB, AWS Lambda, Jenkins, and Grafana**
- Developed a platform – **ACUTE**, which is a centralised system helping in more than 5 domains including reconciliation, sales, tax, support, and reporting
- **ACUTE** has also curtailed the monthly and annual production incidents by **100** and **400** respectively
- Identified, gathered, analysed and automated responses to key performance metrics, logs, and alerts
- Acquired expertise and fostered with **Amstack** – an internal system for automating **CI/CD pipelines in AWS and Jenkins** resulting in slashing the barrier and dependencies from 3rd party service providers

DevOps Engineer – (Remote) (Jun 2020 – May 2021)

- Promoted to **DevSecOps Engineer** within a span of less than a year
- Attained recognition 3 times with **Flame & Ignite** awards, which showcases the **excellent performance**
- Reduced the **docker** build time by **40%** via optimising the **CI/CD** scripts and fixing connections with **AWS**
- Reconciled data b/w **10+ micro-services** and developed new **CI/CD pipelines**

Octonius Inc. – Palo Alto, CA, USA; Barcelona, Spain.

Jun 2018 – Aug 2021

Chief Product Officer – (Hybrid) *(Jul 2019 – Aug 2021)*

Built the entire product from Scratch, started as a Software Engineer, and paved my way up to as a founding member. Worked on the Core System of the application (MEAN Stack), built and maintained the CI/CD pipelines, managed the whole database, and created the entire infrastructure to ship the product to our direct customers.

- Fostered & collaborated with **CEO**; Spearheaded prototyping & implementation of the **15+ services**
- Successfully architecture and led the product development to deliver a highly scalable & maintainable app
- Effectively refactored the existing & delivered an app that was **40% faster, 50% lighter, and 30% robust**
- Recognised twice as the [Best of Palo Alto Awards 2020](#) and [TOP REMOTE WORK TECH](#) by CIO Reviews

Front-End Chapter Lead, Software Engineering – (Hybrid) *(Dec 2018 – Jun 2019)*

- Scrutinised with the founders and directly managed **10+** people in the product development team
- Containerised the application for deployment using **Docker Swarm** and slashed the dependency by **80%**
- Prepared the **official docs** for all **15 services** their corresponding contracts, modules & **150+ REST APIs**
- Built Folio – a real-time collaboration document system using ShareDB, Web Sockets, and Quill.JS supporting up to **1000 concurrent users**.

Software Engineer – (Remote) *(Jun 2018 – Nov 2018)*

- Implemented new features in the app using **Angular 8, Node.js, and MongoDB**
- Integrated **Google Drive Cloud** service in the app
- Ensured the technical feasibility of **UI/UX** designs & optimised app for **scalability** and **maximum speed**
- Created the **Kanban Boards** (Trello like functionality for tasks management) in the app

EDUCATION

The University of Delhi, Netaji Subhas Institute of Technology (NSIT) – New Delhi, India

Bachelor of Engineering (B.E.) – Computers Science, (Aug 2016 – Jun 2020) – **Division 1st**

- Chairperson of the **IEEE-NSIT- CS Chapter** (<https://www.ieeensut.com/>)
- Head of Operations of **HACKEAM'18** & **TEAMC'18** which were a **domestic hackathon** and an **international conference** respectively
- Core-committee member of [Rotaract - NSIT](#), where we organised various events based on menstrual hygiene, plantation & cleanliness drive, cancer awareness camps, sandwich making and distribution drive, aiding marginalised and vulnerable groups, donating books, visiting and serving NGOs

PUBLICATIONS

MorCVD | A Unified Database using Advance Machine Learning

2019

Nature Journal – Scientific Reports

This database is a curated resource that combines 23,377 protein interactions between the human host and 432 unique pathogens involved in CVDs in a single intuitive web application. *It has an impact factor of 42.78* (<https://www.nature.com/articles/s41598-019-40704-5>)

This project is related to the conversion of facial description to the possible matches of faces using GANs and machine learning (<https://ieeexplore.ieee.org/abstract/document/9557583>)

The goal of this research was to assist one in selecting the best exercise among a wide range of contenders by utilising hereditary calculations (<https://bit.ly/exerciseSelection>)

RECENT PROJECTS

Tangerine serves the biz logic of NUHMA NYC, which is the premier caterer for private aviation based in the **New York** area. This **e-commerce** project has been developed to serve as the customer-facing interface, facilitating direct interactions b/w clients & the staff (*TS; Node.js; MySQL; Firebase; Terraform; AWS; Kafka; Websockets*)

Remix Recipe scrapes and parses any website/url provided by the user and retrieve the relevant structured recipe data. Users have the option to remix their recipes, with several different “remix” options, and get the remixed version, powered by OpenAI System (*Typescript; Node.js; MySQL; OpenAI; Auth0; AWS; RDS Aurora; Kafka*)

A subscription-based SaaS platform for supply chain management of coffee & also help coffee brands combine business and consumer action to drive coffee as the new currency for climate action (*Node.js; Python; Angular; MongoDB; Redis; Ionic 4; Server-less; Kafka*)

A subscription-based crypto-currency platform in which one can track the real-time prices of multiple coins, set the triggers for multiple coins, create a portfolio, read news, and tips, etc (*Node.js; Angular; MongoDB; Redis; Flutter*)

The platform aims to gather text descriptions of people's faces that will help in generating realistic faces. Such a tool can be useful for example in forensics for improving eyewitness accounts and facial reconstruction (*MongoDB; Node.js; Angular; Express; Python; GANs; Google Colab*)

AWARDS AND HONOURS

- Achieved the title of **Country Winners** at **Reboot the Earth** presented by the United Nations and represented **India** in the **United Nations** at UN Headquarters, New York to promote women empowerment and how women are affected due to climate change and how it can also affect other 150 Million people
- Featured as the **Inventor of the Month** in the Month of August 2018 by a Japan Based Company - **Progate**
- Supervised as the **Product Development Engineer** at **CareZilla** and accomplished the MVP, which **connects the caregivers and caretakers** (patients - where caregiving is most used to address impairments related to old age, disability, a disease, or a mental disorder) over the **intuitive PWA**

- Taught **15+ children** as a Technical Mentor at **Mentors without Borders** from Middle East and Africa
- Recognised as the **Youth Climate Summit Representative** at **United Nations** and worked on Projects:
 - Aimed to provide **employment to women**; Connect women with diverse **skill sets & STEAM skills**
 - Empower women to **work for climate, child protection**, impact of violence, exploitation, & abuse
 - Decrease the number of **Greenhouse Gases in the environment** – to address **UN Global SDGs**

PROFESSIONAL SKILLS

- **Client-Side / Front End** – HTML; CSS; TypeScript / JavaScript; Angular; React.js; Electron.js; Svelte
- **Server-Side / Back End** – C#; Java; Python; Node.js; TypeScript; Go (Golang)
- **Databases** – MySQL; MongoDB; SQL Server; PostgreSQL; Redis; InfluxDB; Prometheus (TSDB)
- **Programming Languages** – TypeScript / JavaScript; Java; Python; C / C++; Go (Golang)
- **Cloud Technologies** – AWS CloudFormation; Terraform (modular setups, blue/green deployments, for_each, dynamic blocks); AWS CDK; Crossplane (multi-cloud provisioning); IAM; Cognito; Security Groups; NACL; EC2; Lambda; App Runner; Auto Scaling; S3; EBS; EFS; CloudFront; Route 53; Amazon EKS; AWS Systems Manager (SSM); AWS Secrets Manager;
- **Monitoring & Alerting** – Dynatrace; Prometheus (custom exporters, AI-driven alerting); Grafana; Kibana (ELK); CloudWatch; Splunk (Kubernetes-integrated); Loki
- **Security** – GitHub Actions; SonarQube; GitLab CI; IAM; AWS Security Hub; GuardDuty; AWS Shield; WAF; Amazon Inspector; Puppet (node hardening); OPA/Gatekeeper; HashiCorp Vault
- **Logs Management** – Logstash; Fluentd; Splunk; CloudTrail; CloudWatch Logs; Loki; Vector
- **CI/CD & Config Management** – GitLab CI/CD; Jenkins; Bitbucket Pipelines; Travis CI; Flux (GitOps); Spinnaker (canary/rollback); ArgoCD (GitOps pipelines); Helm; Kustomize
- **Search Platforms** – Apache Solr; Elasticsearch (ELK Stack); OpenSearch
- **Messaging Queues / Pub-Sub** – Amazon SQS; RabbitMQ; Kafka; Apache Pulsar; Redis Streams; MQTT
- **Linux / Unix** – File Systems; DNS; Networking; System Calls; Kernel Internals; Performance Tuning for High-Scale Kubernetes; System Troubleshooting; Logging; eBPF; iptables/nftables
- **DevOps / Containerization** – Kubernetes (Operators, CRDs, multi-tenant 1,000+ clusters); Rancher; MinIO; KEDA; Flux; Docker Compose / Swarm; Istio (Service Mesh); GitOps best practices; Python / Go-based self-healing automation; Buildah; Podman; Containerd
- **AI / ML / Agentic Systems** – AI/ML Ops (TensorFlow, PyTorch, scikit-learn); LangChain; OpenAI APIs; Amazon Bedrock; Hugging Face Transformers; Weaviate; Pinecone; Vector Databases; Prompt Engineering; Autonomous Agents; RAG Pipelines; Agentic Framework Design; AI-driven Monitoring and Remediation; Natural Language Interfaces; LLM Orchestration; Generative AI Tools (CodeWhisperer, Copilot, TabNine, Cursor, CodeGenie)
- **Miscellaneous** – Socket Programming; Nginx; Tomcat; GraphQL; Computer Networking; Operating Systems