

# Nikhilesh Yadav

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## Experience

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### Senior Software Engineer

PersanaAI

San Francisco, USA

June 2024 – Present

- Created multiple **AI Agents**, including the flagship “**Quantum Agent**” built in **Node.js** and **Golang**, which handled **20M+ external user requests** with **<6% error rate**. **Quantum Agent** integrated **10+ data providers**, **web scraping**, and **email workflows**, orchestrated with **Temporal.io** and **Go routines** for high-scale automation using **OpenAI/Claude**. Also developed specialized agents for natural language **search**, **query building/editing**, and **workflow creation**, enabling conversational interfaces for **structured data**.
- Refactored backend from an **Express monolith** to modular **NestJS** and **Golang** services, improving deployment speed and observability. Engineered scalable integrations with **rate limiting**, **caching**, and **batching**—boosting throughput to **1K req/s** and reducing **API costs** by **20%**.
- Built a **performant spreadsheet UI** with **React**, **Chakra UI**, and **TailwindCSS**, reducing initial load time from **5.43s to 1.78s (P99)**. Added features like **drag selection**, **inline editing**, and live widget previews (**links**, **images**, **HTML**).
- Implemented full-stack **observability** using **Grafana**, **Loki**, **Prometheus**, and **OpenTelemetry**, enabling **data-driven infra decisions**. Migrated job management from **BullMQ** to **Temporal.io**, reducing task failure rates by **40%**.
- **Led SOC 2 Type 1 certification** as **SPOC** in **3 months**—trained **7 engineers** on **secure coding**, resolved all **Dependabot** alerts, cut **vulnerabilities** by **70%**, and conducted **50+ code reviews** with a focus on compliance and mentorship.

### Software Engineer

Fountane Inc.

Minneapolis, Minnesota

Dec 2022 – May 2024

- Took full ownership of the **Parkpoolr** project, including **direct client engagement** and **leading an intern**, driving **full-stack development**, **infrastructure optimization**, and **bug resolution**. **Reduced GCP costs by 30%** and cut **bug fixing time** from **~30% of development effort** to a minimal fraction through **structured workflows** and **proactive diagnostics**.
- Contributed as a **Full Stack and Backend Engineer** on two additional projects, working with **Angular**, **React**, **Golang**, and **Node.js** to develop scalable services, build frontend features, and optimize **GraphQL/Hasura API** performance.
- Led migration from **VM-based deployments** to **Docker Swarm**, implementing **CI/CD automation** to improve **scalability** and **deployment efficiency**. Also integrated **SSO** and **role-based access control** with **Keycloak** to secure observability dashboards and internal monitoring systems.
- Developed a complete **observability stack** with **Grafana**, **Loki**, **Prometheus**, and **OpenTelemetry**, significantly improving **debugging**, **QA workflows**, and enabling **A/B testing analytics**. Also created an internal **AI Agent** (“**Mondai**”) for Slack, integrating with **Asana**, **Google Calendar**, **Keka HR**, and **Gmail** to unify **task tracking**, **scheduling**, and **HR insights** into a single **conversational interface** for internal team productivity.

### Full Stack Developer (Intern to Engineer)

Pratilipi, 1DIGITALSTACK.AI, MADPAT GmbH

Bengaluru, South Delhi,

Germany

Jan 2021 – Nov 2022

- Developed and maintained **full-stack features** using **Vue.js**, **React.js**, **AngularJS**, **Node.js**, **Python**, **PostgreSQL**, **MongoDB**, and **Redis**, contributing to **production-scale applications** in publishing, analytics, and sales automation domains.
- Migrated legacy frontend components from **AngularJS** to **React.js**, refactored hybrid codebases, and

introduced **rest-hooks**, **runtime validation (Joi)**, and **CI/CD** improvements using **Husky**, **Webpack**, and **GitLab**.

- Contributed to backend **infrastructure upgrades**, including migrating from **Node.js v6 to v14**, shifting from **MEAN.io to Express.js**, and building secure microservices using **RabbitMQ**, **OpenAPI**, and inter-process communication patterns.
- Helped build a secure **Credential Vault** using **double symmetric encryption** for storing **sensitive client data**; implemented **authentication** and **authorization** flows using **Keycloak**, **OAuth2.0**, **JWT**, and **Passport.js**.
- Identified and documented a critical **security vulnerability** that exposed admin credentials through leaked secret keys, using tools like **Postman**.
- Designed data instrumentation and **analytics pipelines** with **Amplitude** for **A/B testing**, experiments, and **product metrics**, contributing to a **160% increase** in **web-to-app installs**.
- Automated development and onboarding environments using **Docker**, **.devcontainer**, and **Bash scripts** to speed up local setup and maintain **consistency across teams**.

## Projects

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### Quantum Agent – Enterprise AI Automation

*PersanaAI (2024)*

- Production **AI Agent** built at **PersanaAI**, handling **20M+ requests** with external integrations, **NLP automation**, and fault-tolerant orchestration. (See “**Experience**” section for full details.)

### C++ REPL – Interactive Language Runtime

[c-repl/c-repl](#)  

- Developed a fully functional **C++ interpreter** with both **CLI** and **web REPL** interfaces, enabling interactive **C/C++ code execution** and **debugging**.
- Built **custom parsers** using **PEG.js**, interfacing with **GCC** and **GDB** for **real-time compilation** and **step-debugging**.
- Implemented **multi-process architecture** and **IPC**, along with a web-based frontend using **React.js**.
- **Tools Used:** Node.js, TypeScript, React.js, PEG.js, GCC, GDB

### TCP Proxy Server

[tcp-proxy](#)  

- Created a **transparent TCP Proxy Server** in **Node.js** enabling **client authentication** and **real-time connection logging**.
- Focused on **low-level socket handling** with extensibility for **debugging** and **network security** use cases.
- **Tools Used:** Node.js, Net module, TCP/IP stack

## Technologies

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**Languages:** JavaScript, TypeScript, **Golang**, C++, Python, SQL

**Frontend:** React.js, Vue.js, Angular, Chakra UI, TailwindCSS

**Backend:** Node.js, NestJS, Express.js, GraphQL, Hasura, OAuth2.0, JWT, REST, RabbitMQ

**Infrastructure:** Docker, GitLab CI/CD, Redis, KafkaJS, Temporal.io, AWS (Amazon Web Services), GCP (Google Cloud Platform)

**Databases:** PostgreSQL, MongoDB

**Monitoring & Analytics:** Grafana, Prometheus, OpenTelemetry, Amplitude

## Education

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### Dr. A. P. J. Abdul Kalam Technical University

*Aug 2017 – May 2021*

*B.Tech in Computer Science and Engineering, Lucknow, Uttar Pradesh*

- **Coursework:** DSA, OS, CN, DBMS, Software Engineering, AI, Web Technologies