

RAUNAK SADHWANI

AI & Software Engineer | Full-Stack Development | Applied AI

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Software engineer with experience delivering web, mobile, cloud and AI systems across industry, research, education, healthcare and e-commerce. Currently building enterprise AI and operational automation at Blain Hydraulics. M.Sc. Software Engineering at Hochschule Heilbronn, German grade 1.8. Combines hands-on engineering with an understanding of business processes and end-to-end product delivery.

PROFESSIONAL EXPERIENCE

Blain Hydraulics | AI & Software Engineer

Feb 2026 - Present | Germany

- Built the company's internal AI platform using Hermes and LiteLLM, with an enhanced interface and Slack integration.
- Implemented custom role-based access control in application code, rather than relying on prompts to enforce permissions.
- Working on production traceability across countries and improving the production website and its operational workflows.
- Automated freight reporting workflows that previously required manual data entry into Excel.
- Automated Kanban tickets with employee progress updates and ratings.
- Introduced a local GitLab implementation and Git-based version control where no Git workflow had previously been used.
- Handled Microsoft 365 and system administration, including domain controller tasks and domain joins.
- Experience working with Sage ERP in an industrial environment.
- Extensive work with Zoho Analytics and Zoho Books, including automated report-to-report workflows; some Zoho CRM experience.

ICPS / Hochschule Heilbronn | Research Assistant / Hilfswissenschaftler

Jun 2025 - Present | Künzelsau, Germany

- Architected a 1D-UNet achieving 80% accuracy in snow, ice and roof-layer classification on NASA SnowEx17 data, using 10,000+ radar samples including synthetic signals.
- Built radar cleaning, normalization and feature-extraction pipelines, reducing manual preprocessing effort by 70%.
- Developing Python visualization tools for 50+ analytical plots annually and automated roof snow-load calculations; reported 65% improvement in decision-making efficiency.
- Engineered 20+ FastAPI endpoints with JWT authentication and SQLAlchemy for 100+ concurrent UAV workflow requests.
- Built React and Material UI dashboards for 4+ user roles and 100+ projects. Optimized PostgreSQL for 20,000+ measurement records with 40% faster queries.

TF Strategies | Full Stack Developer

Apr 2022 - Oct 2023 | Kolhapur, India

- Developed 8+ MEVN and Flutter business applications serving 2,000+ daily active users, including 5 mobile apps with offline support and real-time synchronization for 1,500+ users.
- Architected 50+ REST APIs with 99.5% uptime and 45% faster responses. Migrated 3 applications from MySQL to MongoDB, optimizing 200+ queries and improving access speed by 60%.
- Partnered with 15+ clients across 6 industries and delivered 12 projects on schedule, with 95% client satisfaction.
- Improved page load time by 50% and mobile traffic by 35%. Modernized 4 legacy PHP applications handling 500+ daily transactions with backward compatibility and zero downtime.

Independent | Freelance Full Stack Developer

Nov 2021 - Dec 2023 | Remote / Clients across 5 countries

- Delivered 25+ full-stack applications with a 98% on-time delivery rate using Vue, React, Hono, Flask, Spring and Flutter.
- Built 3 e-commerce platforms processing 5,000+ monthly transactions, 2 CRMs managing 1,000+ customer records, and chat systems supporting 500+ concurrent users.
- Automated AWS infrastructure with Terraform, reducing provisioning time by 70%; integrated Razorpay and Stripe, and reduced CDN latency by 55% with CloudFront.

SELECTED PROJECTS & EXPERTISE

Raunak Sadhwani | AI & Software Engineer

KEY PROJECTS

Let's Catch Up - Educational Management System | Full-stack platform

letscatchup-kcs.com

- Built a TypeScript, Bun and Hono.js backend with 100+ REST APIs and 10+ user roles, handling 5,000+ daily requests with 99.8% uptime across authentication, academics and payments.
- Engineered WebRTC conferencing with MediaSoup SFU for 100+ concurrent HD sessions, screen sharing and cloud recording; processed 200+ hours of video monthly across 4 worker processes.
- Built Socket.IO and Redis messaging for 1,000+ concurrent users, 50,000+ daily messages, attachments up to 25MB and sub-100ms delivery.
- Integrated Razorpay and Cashfree for \$100K+ yearly transactions, automated split settlements, installments and webhook reconciliation with 99.9% payment success.
- Optimized Couchbase/Ottoman and Redis to reduce query latency by 65%; integrated Cloudflare R2/AWS S3 for 500GB+ assets and synchronized 8 microservices handling 10,000+ daily operations.

Relaxury - Business Website Builder | SaaS platform

relaxury.web.app

- Built a Vue, PHP and MySQL website builder enabling 100+ users to create business websites in under 60 seconds, with 75% user satisfaction.
- Designed 7+ customizable templates and live preview, reducing website creation time by 90%. Automated Firebase CI/CD with 20+ yearly releases, 99.9% uptime and 40% faster deployment.

TECHNICAL SKILLS

Frontend: Vue, React, MUI, HTML5, CSS3, JavaScript, TypeScript, Tailwind

Backend: Node, Express, FastAPI, PHP, Flask, Spring Boot, Hono, Bun, REST APIs

Mobile: Flutter, React Native, Dart, cross-platform iOS and Android

Data: MongoDB, MySQL, PostgreSQL, Firebase, DynamoDB, Couchbase, SQLAlchemy, Redis

Business systems: Zoho Analytics, Zoho Books, Sage ERP; some experience with Zoho CRM

Cloud & DevOps: AWS Lambda, Cognito, CloudFront, S3, API Gateway, CloudWatch, Docker, Linux, cPanel, Terraform, CI/CD, GitLab, Microsoft 365 administration

AI & engineering: Hermes, LiteLLM, PyTorch, deep learning, neural networks, UNet, data preprocessing, signal processing, Python, Java, SQL, Git, GitHub, Alembic, WebSocket, WebRTC, JWT, RBAC, data structures and algorithms

EDUCATION

M.Sc. Software Engineering - Hochschule Heilbronn, Germany | March 2024 - February 2026 | **German grade: 1.8**

Cloud Computing, DevOps, Artificial Intelligence, Business Models, Software Architecture. Thesis/research focus: deep learning for radar-based snow analysis.

Bachelor of Computer Applications - Shivaji University, India | 2020-2023 | 81.3%

Programming, Software Development, Networking, Database Management, Data Structures.

CERTIFICATIONS & LANGUAGES

AWS Academy Graduate - Cloud Developing | Amazon Web Services

Agile with Atlassian Jira | Atlassian

Building Generative AI-Powered Applications with Python | IBM

Prompt Engineering | Vanderbilt University

Languages: English C1 | German B1