


# Roshan Prakash

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Domain expertise in Software Engineering, E-commerce and Energy  Crewe, GB

## EDUCATION

 **University of Liverpool - United Kingdom**

**September 2022 - July 2024**

**Master of Science - Data Science and Artificial Intelligence**

*Majors: Statistical Methods, Predictive Modeling, Data Visualization, Machine Learning.*

*Accredited by BCS, The Chartered Institute for IT*

 **Dr. M.G.R. Educational and Research University - India**

**July 2015 - April 2019**

**Bachelor of Technology - Mechanical Engineering (First Class)**

*Majors: Statistical Process Control, Engineering Analysis, Design of Experiments.*

*Received Top 10% competitor award in National Zero Carbon Challenge (IIT-Madras)*

## PROFESSIONAL SUMMARY

Data Engineer with 5+ years of specialized experience in MongoDB infrastructure management, site reliability engineering, and automated database operations across financial services and technology sectors. Expert in incident response, capacity planning, and database performance optimization for high-availability environments.

## WORK EXPERIENCE

**Trident Solutions Pvt Ltd - Chennai, India**

**March 2021 - Present**

**Senior Data Engineer - Freelance**

*Skillset: AWS, SQL, MongoDB, Ansible, Git, Docker.*

### Infrastructure Foundation & Automation:

- **Spearheaded MongoDB infrastructure automation using Ansible**, creating standardized configuration management for 25+ database servers across development, staging, and production environments.
- **Deployed MongoDB on Kubernetes clusters using StatefulSets and custom operators**, achieving seamless auto-scaling and self-healing database infrastructure.

### CI/CD & Development Pipeline:

- **Built enterprise-grade MongoDB CI/CD pipelines**, integrating automated testing, schema validation, and deployment processes that reduced deployment errors by 95%.

### API Development & Integration:

- **Architected 3 high-performance REST APIs using Java and Guice framework**, enabling real-time database query validation for 1300+ indexed attributes.
- **Integrated API responses with AWS services (Lambda, ECS Fargate, CloudWatch)**, achieving 85% faster information retrieval and improved system efficiency.

### Monitoring & Reliability:

- **Implemented comprehensive API monitoring and alerting**, ensuring 99.8% availability for critical database services.

## **Radius Telematics - United Kingdom**

**September 2024 - Present**

### **Analyst - Full Time**

**Skillset:** *Excel, SQL Server, Tableau, Salesforce and Hardware troubleshooting.*

- Leveraged Excel, Salesforce, and Tableau to analyze customer data patterns, identifying quality issues with 87% accuracy.
- Achieved Top 4 Performer in FY24-25 status as a new hire by developing worked and unworked data, supporting agent enablement for UK teams in optimising fleet management strategies.
- Collaborated with senior stakeholders in Sales and Marketing to enhance data quality, resulting in improved campaigns that increased the Net Conversion Rate to 2%, meeting the industry standard for UK fuel cards.
- Created an interactive Tableau dashboard called the "Campaign Glossary," helping 10+ European and UK managers analyse campaign and sub-campaign performance. The insights enabled them to implement new campaigns based on conversion rates.
- Implemented QR code installation guides after analyzing common error patterns in customer feedback data.

## **Omdena - Remote**

**May 2024 - September 2024**

### **Machine Learning Engineer - Contributor**

**Skillset:** *Pandas, PyTorch, DagsHub, Sci-kit learn, PowerBI, XGBoost, OpenCV, and Python.*

- Currently participating in Utilizing Machine Learning for Enhanced Valuation of Personal Injury Claims with Omdena contributors.

### **Pollution Status and Prevention Analysis Using Social Media Data - [NLP](#)**

- Applied statistical methods to analyze social media data, resulting in 40% faster data processing
- Utilized Power BI and Python to create visualizations of sentiment analysis results, improving accuracy from 85% to 93%
- Designed experimental frameworks to test and validate machine learning models for personal injury claims valuation
- Translated complex analysis findings into clear, actionable recommendations for project stakeholders.

## **University of Liverpool - United Kingdom**

**October 2022 - April 2024**

### **Postgraduate Researcher - Contributor**


**Skillset:** *Javascript, Tensorflow, C++, Unity, Github, FastAPI, Docker, Linux, and Python.*

- Currently participating in advanced research scholar training in Geometric Data Science, mentored by [Dr Olga Anosova](#) and [Professor Vitaliy Kurlin](#). Focusing on the innovative intersection of geometry and data science methodologies.
- Engineering a responsive, web interface using Next.js for [CathSim](#), an open-source simulator for endovascular intervention, facilitating seamless user interaction and real-time visualization of complex medical simulations.

## **VisionAlign - AI-Driven Strabismus Correction Tool - Digital Innovation Facility**

- **Developed innovative database visualization tools using Next.js and WebGL**, creating interactive interfaces for complex medical simulation databases.
- Public funded project under the auspices of the NHS-UK, collaborating with Professor [Anh Nguyen](#) ([project](#)).
- **Conducted advanced research in database performance optimization**, focusing on geometric data indexing and query optimization for large-scale datasets **Think-link**.

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## Reinforcement Learning for Intelligent Navigation (Dissertation)

- Implemented statistical methods and experimental designs for autonomous driving simulations
- Utilized Excel and Power BI to analyze and visualize complex traffic scenario data
- Developed predictive models achieving 93% accuracy through careful analysis of simulation results
- Created interactive dashboards to communicate research findings to non-technical stakeholders
- Applied root cause analysis techniques to identify and solve algorithmic performance issues

## Zola the Chatbot | Natural Language Processing

- Developed a chatbot trained on a diverse range of customer service queries to provide seamless support. Leveraging ChatGPT, the chatbot utilized natural language understanding and generation to provide accurate and context-aware responses to customer inquiries.

## Full Creative, Anywhereworks

December 2021 - August 2022

### Product Expert

**Skillset:** Javascript, Google Analytics, HTML5, CSS, Postman, Jira, Git, UX Research and RestAPI.

- **Designed comprehensive database testing methodologies**, ensuring data integrity and optimal performance for RESTful API integrations
- Utilized Google Analytics and Excel to perform regression testing and identify quality issues.
- **Collaborated with cross-functional teams on database integration testing**, supporting seamless integration with external platforms (Meta, Google, Mailchimp, Zapier).
- Applied root cause analysis techniques to identify and resolve product quality issues.
- Collaborated closely with cross-functional product development teams and software engineers, contributing to the enhancement of operational efficiency, and actively engaging in rigorous RESTful API testing, thereby providing valuable insights and actionable recommendation for improvement.
- **Implemented automated regression testing frameworks**, reducing manual testing effort by 70% and improving release reliability.

## Amazon, Inc - Chennai, India

December 2019 - February 2021

### Associate - Automation

**Skillset:** Python, AWS, Pricing Analytics, E-Commerce, PostgreSQL, XML, Selenium and HTML5.

- Leveraged **Excel, Power BI, and SQL** to analyze sales performance and pricing parameters.
- Developed automated database monitoring and alerting systems, implementing 17 process improvements that enhanced operational efficiency by 9% - Project Bolt.
- Presented tool optimization techniques to Leaders during Q3, improvised tool efficiency by 12%.
- Developed a facilitation tool and held technical training sessions for the new hires in the team.
- **SPOTLIGHT AWARD: BEST HIRE (Q2-2020).**
- **SPOTLIGHT AWARD: MOST PROCESS IMPROVEMENTS (Q4-2020).**

## Aspiration EnergyPvt. Ltd. - Chennai, India

June 2019 - October 2019

### Application Engineer

**Skillset:** Product Development, Project Planning, CAD, Excel and Python

- Introduced Machine Failure Prediction in IoT ([thermelgy](#)) to avoid power shut-downs. Proposed B2B technical product demonstrations to define scope of implementation.

- Designed multiple heat pump integrations which are cutting down carbon emission. Assisted in developing the first in India (THERMAGEN-2X) OEM heat pump. Revised cost effective plans to minimize payback period for heat pump implementation.
- Coordinated design/project teams with sales teams to resolve energy consumption problems and to minimize carbon footprint globally in industries.

## SKILLS

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**Database Technologies:** MongoDB, MySQL, PostgreSQL, CI/CD, Database Migration

**Infrastructure Automation:** Ansible, Terraform, Chef, Puppet

**DevOps & CI/CD:** Git, JIRA, Jenkins, GitLab CI, Azure DevOps, Data Modelling

**Container Orchestration:** Kubernetes, Docker, OpenShift, Helm Charts

**Site Reliability Engineering:** Incident Response, Capacity Planning, SLO/SLA, Disaster Recovery

**Monitoring & Observability:** Prometheus, Grafana, ELK Stack, New Relic, MongoDB Ops Manager

**Scripting & Automation:** Python, Bash, PowerShell, Groovy, YAML

**Cloud Platforms:** AWS (EC2, RDS, CloudWatch, Lambda), Azure, GCP

**Risk & Controls:** Change Management, Risk Assessment, Compliance Frameworks, ITIL

**Project Management:** Agile, Scrum, Jira, Salesforce

## LANGUAGES

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**English** (CEFR Level C1 Proficiency); **Tamil** (Native); French (Elementary)