

# Rajkanwar Singh

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## WORK EXPERIENCE

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### *Data Science Intern | 06/2024-Present*

#### Neuralix.ai

- Designed and implemented an H2O Wave dashboard template adopted by a 6-member data science team, accelerating the creation of proof-of-concept dashboards within 2-3 hours.
- Conducted time series analysis on 9 water pumps for a prominent US-based client.

### *UG Student Researcher | 05/2023-Present*

#### Innovation & Incubation Centre, VIT-AP University

### *Data Science Intern | 09/2023*

#### Happielloop Technologies

## PROJECTS

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### *Malicious Sensor Detection Big Data Pipeline | 06/2024*

- Developed and deployed Docker microservices with 99.9% uptime.
- Used PostgreSQL for batch and real-time data processing, improving query performance by 50%.
- Leveraged Kafka to process 1 million data streams per minute.
- Created a Flask API with 200ms response time, supporting 10,000 calls/sec.
- Utilized Flink for real-time ML prediction, verification with a voting classifier, online model retraining with increasing availability of data, and online feature selection using deep learning.

### *Malicious Sensor ML Modelling | 04/2024*

- Cleaned and preprocessed sensor data from 1000 instances with 25 features, including outlier removal and feature scaling.
- Implemented 5 machine learning algorithms, including Random Forest, XGBoost, and Gradient Boosting, with hyperparameter tuning.
- Achieved outstanding accuracy of 99.98% with XGBoost Classifier for detecting malicious sensor activity.
- Performed feature importance analysis to identify key factors contributing to malicious activity detection.
- Conducted thorough model validation and testing to ensure robustness

### *Starbucks Beverage Recommendation System | 06/2023*

- Cleaned and analyzed Starbucks Beverage Nutrients dataset with 242 entries.
- Applied RandomForest Classifier with 75% accuracy for beverage recommendations.
- Integrated the system into a React app with FastAPI within 24 hours

### *SPSRS: Smart Package Sorting and Retrieval System | 01/2023 - 05/2023*

- Designed an automated package handling system using machine vision and a robotic arm, reducing package handling time by 40%.
- Integrated geared motors and camera-based OCR for efficient package identification, achieving an accuracy rate of 75%.
- Implemented RFID sensors for one-tap package retrieval, resulting in a 80% reduction in manual intervention.

### *Home Assistant Server with Frigate NVR on an Old Intel x86 Laptop | 08/2022*

- Repurposed an old Intel x86 laptop into a home assistant server, reducing hardware costs by 80%.
- Installed Linux, Docker, and Frigate NVR for CCTV object detection.
- Monitored Docker containers and resources using Portainer, improving system performance by 30%.

### *CRAFT: Certificate Registration and Verification Tool | 06/2022*

- Developed a certificate generation and verification system using Google Sheets and Apps Script, reducing certificate processing time by 70%.
- Automated certificate management and verification processes, resulting in a 90% reduction in manual effort.
- Collaborated with MCM DAV College, Chd for successful implementation, delivering e-certificates to 500+ recipients.
- Achieved 100% on-time delivery of e-certificates, ensuring a seamless and efficient certificate management system.

## RESEARCH & PUBLICATIONS

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**Statistics and Machine Learning based Decision-Making for Diet Beverage Choice and Recommendation through Software Application.** *Journal of Advanced Research in Applied Sciences and Engineering Technology*, Semarak Ilmu Publishing. (in print)  
**Reinforcement Learning Approach in Supply Chain Management: A Review.** *How Machine Learning is Innovating Today's World: A Concise Technical Guide*. SCRIVENER PUBLISHING & WILEY (pp.253-283). May 2024.

DOI:10.1002/9781394214167.ch17

**Navigating the Technological Landscape: Addressing Challenges in Sustainable Business Practices.** *SUSTAINABLE BUSINESS AND INFORMATION TECHNOLOGY*. February 2024. DOI: 10.25215/9392917880

## EDUCATION

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**VIT-AP University**

B.Tech Computer Science and Engineering | 07/2025

## CERTIFICATES

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- AWS Certified Solutions Architect Associate
- AWS Certified Cloud Practitioner
- Machine Learning Training by Boston Training Academy powered by Intel® Software
- Applied Data Science by IBM

## HACKATHONS & COMPETITIONS

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**VIT Campus winners- Tata Elxsi Teliport Challenge | 12/2023**

**3rd Position in VLaunchPad Annual National Business Plan Competition for Agritech Innovation | 01/2023**

**Finalist in HACK-23 International Hackathon for Sustainable Innovation | 07/2023**

## CO-CURRICULARS

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**ACM Student Chapter VIT AP**

- Managed ACM Student Chapter VIT AP as Club Manager from 08/2023 to 06/2024, overseeing external affairs and coordinating with 5 university clubs to organize events.
- Automated event report generation for 75+ clubs, reducing manual effort by 50% and improving internal processes.
- As External Affairs Lead (08/2022 - 08/2023), facilitated over 10 pro bono events, forged collaborations with companies, and automated member performance evaluations, cutting manual work by 95%.

**VIT-AP SCHOOL OF BUSINESS (VSB)**

**Event Student Coordinator | 10/2022**

- Organized guest talk featuring Mr. Aman Goel, Founder, Cogno AI, a \$1.5 million AI-led enterprise communications startup.
- Managed a 7-member student team, overseeing tasks and moderating an online MS Teams event with 300+ participants.

## SKILLS

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**Programming Languages:** Python, YAML, Java, R

**Big Data Analytics Tools:** Kafka, Flink, Hadoop

**Machine Learning Frameworks:** TensorFlow, PyTorch, scikit-learn

**Dashboard Tools:** H2O-Wave, plotly

**Virtualisation:** Docker

**Databases:** MySQL

**Cloud Computing:** AWS

**Office Skills:** Microsoft-suite, Google workspace

**Soft skills:** Communication, Leadership, Analysis, Writing