Rahul Agarwal

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PROFESSIONAL SUMMARY

As an AI/ML Engineer, Im all about creating smarter, scalable solutions using Python, deep learning, and automation. I work with cutting-edge technologies to solve real-world problems and make a tangible impact, helping businesses innovate and grow.

EXPERIENCE

Xconics
AI/ML & Python Engineer - IIoT

22th April 2025 – Present
Mumbai, Maharashtra

Avinya Digital Innovations
AI | ML Enginner & Python developer

20th January 2024 – March 2025
Surat, Gujarat

Einfochips An Arrow Company: Summer Intern
ASIC Flow Orientation

July 2023 – August 2023
Ahmedabad, Gujarat

SKILLS

AI & ML: GenAI, Deep Learning, CNN, LSTM
Computer Vision: YOLO, OpenCV, OCR, Image Processing
Programming: Python, SQL, Google Apps Script
Frameworks/Tools: Django, REST APIs, AppSheet, NumPy, Pandas, Scikit-learn
IoT & Embedded: Raspberry Pi, Arduino, ESP32/8266, FPGA, MSP430, LPC2148(ARM7)

PROJECTS

Forklift Monitoring System (Xconics)
IoT-Based Forklift Productivity Tracking (Mahindra Logistics)

- Designed a real-time IoT pipeline using MQTT with a FastAPI + PostgreSQL backend to track forklift engine status, load activity, and zone movement

Anti-Theft Surveillance System (Xconics)
Camera-Based Object Detection with FastAPI + S3 PCBL

- Developed a real-time object detection system with alert generation for theft prevention and processed and stored raw/processed images in AWS S3 using FastAPI-based backend

Hand Movement Detection System (Xconics)
Sensor-Based Motion Analysis for Industrial Harvesting

- **Built a motion tracking system** using IMU sensors to detect hand gestures which detect precise hand movement detection to **minimize unnecessary motion** and identify optimal plucking gestures
- Provided insights into **working hours and efficiency**, reducing waste movements and improving operational accuracy

AI Web Scraper (Avinya Digital Innovations)
Customizable Data Extraction Tool

- Built a flexible Python scraper using Crawl and Groq with a Streamlit UI for user input
- Supports multiple output formats and scrapes 10+ platforms with 10s/page performance

Upwork Extensions (Avinya Digital Innovations)

Job Automation & AI Cover Letter Tool

- Created extension + website for instant job alerts and auto-application in under 2 minutes
- Used AI to generate personalized cover letters and attach media based on user profile

Upwork Extensions (Avinya Digital Innovations)

Job Search and Application Automation Tool

- **Created an extension and website** designed to provide users with instant job notifications on Upwork, enabling quick responses to newly posted jobs within 2-3 minutes
- Automates the entire application process, from **notifications to cover letters**, ensuring users can apply faster and increase their chances of selection

Automation & Web Scraping Tool (Avinya Digital Innovations)

- **Developed an automation and Web-Scraping** using PyAutoGUI, Selenium, requests and Docker, etc to streamline ITR downloads, financial report generation, and loan eligibility assessment. Created tools for automated WhatsApp messaging and website data extraction.

Life Expectancy Vehicular System

System for sending alert when accident is detected, using GPS, GSM and Raspberry Pi

Drone Delivery System (SSIP Grant)

Research and Feasibility Study for Last-Mile Delivery

- **Conducted a research project** to explore the potential of drone delivery systems for last-mile logistics, analyzing the feasibility and challenges of using drones in real-world applications
- Evaluated the **pros and cons** of drone-based delivery, considering factors such as cost-effectiveness, safety,etc.Although the prototype was not developed due to team separation, the research **established a solid foundation** for future development, providing a clear roadmap for subsequent implementation

Exercise pose recognition and counting sets (MSP Cup 2022)

R-10(Asia-Pacific) level competition

- **The system was developed** using Python, incorporating angle calculations and the MediaPipe library
- The system offers **features** such as a timer, counter, exercise guidance, pose detection, and error detection

EDUCATION

BE-Electronics and Communication Engineering 2020 – 2024

Sarvajanik College of Engineering and Technology(ECE Department NBA Accredited) Surat, Gujarat

- **Specialization/Minors**: Artificial Intelligence and Machine Learning (CGPA: 8.66)
- **Grade**: 8.29

ACHIEVEMENTS

Drone Delivery System SSIP Grant for SKYBOUND (1 Lakh) 2024

Startup Support and Innovation Program (SSIP), Government of Gujarat

Secured 1st Position at the Multimedia Signal Processing Cup 2022 6th August 2022

R-10(Asia-Pacific) level competition organized by IEEE SPS Gujarat Section

CERTIFICATIONS

100 Days of Code: The Complete Python Pro Bootcamp) 🔗

Online Course by Dr. Angela Yu on Udemy 52 hours