KIRTI SIKKA

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SUMMARY

Full Stack Developer and Machine Learning enthusiast with expertise in both frontend and backend technologies. Passionate about creating user-friendly solutions and exploring Deep Learning and Large Language Models (LLMs). Seeking opportunities to apply technical skills in impactful projects that drive innovation and efficiency.

EDUCATION

B.Tech in Computer Science with AI, Amrita Vishwa Vidyapeetham — Expected Nov 2026
St. Mary's Sr Sec School — 12th CBSE: 95%, 10th CBSE: 93%

EXPERIENCE

AI Engineer Intern — June 2024 - Present
Ylogx, Kochi

- **Invoice Processing Automation:**
  - Conducted comprehensive research on OCR technologies and created custom datasets for invoice processing
  - Trained and fine-tuned multiple models including Spacy NER, LayoutLLM, and Donut from scratch with detailed annotations
  - Integrated the ML pipelines with backend services and contributed to frontend development using React
  - Achieved 92% accuracy in field extraction through ensemble approach and custom post-processing
- **RAG-Based Chatbot:**
  - Conducted extensive research on various RAG architectures and implementation techniques
  - Performed comparative analysis of different LLMs including GPT, LLaMA, and custom models in Langflow
  - Engineered custom prompts and context handling for improved response accuracy
  - Developed and deployed a user-friendly interface using Streamlit for easy interaction

PROJECTS

Medical Inventory Automation — December 2024
PaddleOCR — LayoutParser — Python — Pandas — OpenCV— Streamlit
Automated medical inventory management system processing 1000+ monthly invoices with 98% field extraction accuracy. Implemented custom document layout analysis using LayoutParser and intelligent text correction system. Reduced manual data entry time by 80% while maintaining high accuracy through domain-specific validation rules.Deployed on Streamlit.

Autonomic Number Plate Recognition — May - June 2024
Machine Learning — YOLO Models — OpenCV — TensorFlow
Developed an end-to-end ANPR system using YOLOv8 for real-time license plate detection and character recognition, achieving 95% accuracy. Implemented custom CNN architecture for character segmentation and recognition with post-processing optimization. Integrated the system with a web interface for real-time monitoring and analysis, with sub-100ms inference time.

Human-Computer Interaction (HCI) Application — Jan - Feb 2024
React.js — Django — Docker — PostgreSQL
Built a web platform for analyzing user interaction patterns with real-time session tracking and heatmap generation. Containerized the full-stack application using Docker for seamless deployment across environments.

Martian Chronicles — Dec 2023 - Jan 2024
Python — PyQt6 — NASA API — SQLite — Pandas
Created a desktop application for real-time access to Mars rover imagery with automated NASA API synchronization. Developed an intelligent search system with filtering capabilities for mission sols, cameras, and capture dates. Implemented local caching and automated email reporting system with customizable templates.

OPEN SOURCE CONTRIBUTIONS

Wikimedia December 2024
BulkOCR Project,Bhubaneswar, Odisha
Developed and implemented an OCR pipeline for Wikisource, enabling efficient book transcription and digital accessibility improvements. Created automated workflows for bulk processing of historical documents.

InfoBox Enhancement Project, Kochi, Kerala
May 2024
Created a UserScript to extend infobox functionalities on Wikimedia platforms, improving data structuring and completion capabilities.

Shaktikon 2023 Website
Contributed to the development and deployment of Shaktikon's official website, ensuring optimal performance and accessibility.

PUBLICATIONS

"A Systematic Review on Pre-Trained Models on C-NMC Leukemia Using Deep Learning"
Kirti Sikka, Aniketh Vijesh, Remya S.
Comprehensive review of deep learning-based leukemia detection models, highlighting various preprocessing, segmentation, and classification techniques. Link.

"IoT-Enabled Cost-Effective Solar-Powered Sustainable Irrigation System for Rural Communities"
Akshaya Krishnan, Gayathri B Nair, Kirti Sikka, et al.
Published by IEEE, this research explores a sustainable IoT-driven irrigation system for rural agricultural efficiency. Link.

ACTIVITIES

SSR Project - Cybersecurity
Conducted an awareness session on cybersecurity and online scams at GR Public School, Trivandrum. Covered topics like phishing, identity theft, and malware, engaging students through interactive activities and discussions. The initiative aimed to equip young minds with essential digital safety skills.

Hacktoberfest Speaker
Invited speaker at Hacktoberfest, where I delivered a session on open-source contributions, version control, and community collaboration.

SKILLS

Technical: Python, C++, JavaScript, React.js, Django, TensorFlow, PyTorch, Docker, UI/UX Design, Postgress SQL
Other: Teamwork, Leadership, Mentoring