

Kunal Pal

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Experience

Rthetapi

Aug 2024 – Nov 2024

Software Developer (Intern)

- Engineered an admin panel and user signup page using the MERN stack for an attendance-tracking application, improving user management efficiency and received positive feedback for intuitive design.
- Integrated an API server with the user management platform, enabling seamless real-time monitoring and data visualization that enhanced operational workflows.
- Tested and verified REST API endpoints using Postman, ensuring correct POST, GET request handling and valid JSON responses.

Education

Bachelor of Computer Applications

November 2021 - July 2024

Institute of Innovation in Technology and Management, Delhi

CGPA: 8.1

High School

Apr 2019 - Apr 2021

Rich Harvest Public School, Delhi

- Python Programming, Economics, Business, Accounts and English

Projects

Punctual.ai | React, TypeScript, Supabase (PostgreSQL), n8n, Ollama, Gmail API, Slack API, Google Calendar API

- Built an HR attendance automation system where n8n workflows ingest monthly Excel muster reports, parse each employee's punch-in/punch-out times and classify daily status codes (Present, Absent, Off, Late Coming), and upsert structured records into Supabase PostgreSQL.
- Implemented a workflow audit trail that logs a timestamped record after every significant automation node, giving admins full visibility into every action the system has taken.
- Integrated Ollama (local LLM) to analyse employee attendance behaviour, draft personalised warning emails via Gmail API and Slack notifications, and trigger automated third-strike notices to the employee's inbox and team Slack simultaneously.
- Engineered a role-based React and TypeScript admin dashboard for real-time attendance monitoring, leave balance tracking with Recharts visualizations, and direct approval or rejection of employee excuse appeals that feed back into the automation workflow.

Hand Gesture Tic-Tac-Toe | Python, Flask, MediaPipe, JavaScript, HTML/CSS

- Built a real-time hand tracking Tic-Tac-Toe game with 95% gesture recognition accuracy using MediaPipe, enabling intuitive webcam-based gameplay.
- Integrated Minimax algorithm with alpha-beta pruning for AI opponent with three difficulty levels, providing optimal decision-making and challenging gameplay strategy.
- Developed a Flask backend with Socket.IO for real-time communication and created a responsive frontend with score tracking, undo functionality, and symbol selection features.

AI Platformer Prodigy | Python, PyTorch, OpenAI Gym

- Designed an AI training framework for "Super Mario Bros" using reinforcement learning algorithms like PPO and DQN, achieving a 90% level completion rate through optimized agent performance.
- Implemented Vectorization, Frame Stacking, and Grayscale techniques to enhance training efficiency by 60%, significantly reducing computational time and resource requirements.
- Conducted extensive performance analysis and tuning to optimize agent decision-making capabilities and performance across different game scenarios.

Skills

Programming Languages: Python, JavaScript, Go, C/C++, Java, PHP

Libraries & Frameworks: Django, Flask, React, Node.js, Express.js, Pandas, NumPy, Matplotlib, TensorFlow, PyTorch

Tools & Technologies: Docker, Ollama, Kubernetes, n8n, Git, GitHub, GitLab, GNU/Linux, Bash, PowerShell, Supabase, PostgreSQL, MongoDB, MongoDB Atlas, HTML/CSS, SQL

Miscellaneous: Data Structures and Algorithms, Operating Systems, Database Management Systems, Computer Networking, Machine Learning, AI, Excel