Aditya Ranjan Jha

Systems / Infrastructure Engineer - India

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Summary

Self-taught systems developer focused on backend infrastructure, Linux systems, and performance oriented engineering. Experienced building modular backend services, real time communication systems, and experimental systems projects including RF based human presence detection and Rust performance exploration. Interested in distributed systems, infrastructure tooling, and high performance backend systems.

Technical Skills

Languages	Python, Rust
Backend and Networking	FastAPI, REST APIs, WebSockets, Async Programming
Systems and Infrastructure	Linux, Shell Scripting, CLI Automation, System Debugging
Concepts	Concurrency, API Architecture, Performance Optimization, Networking Fundame
Tools	Git, GitHub, OBS, PipeWire, Arch Linux

Projects

WiFi RF Human Presence Detection System - https://github.com/middi870/wifi_rf
- Experimental RF sensing system detecting human presence via WiFi signal fluctuations.
- Implemented signal processing pipeline and real time visualization dashboard.
- Explored feature extraction and movement induced signal pattern analysis.

Modular Backend API Platform
- Developed scalable FastAPI services with modular routing and async request handling.
- Designed backend architecture for maintainability and clear service separation.
- Implemented reusable backend components for easier debugging and extension.

Real Time WebSocket Communication System
- Built backend messaging system using persistent WebSocket connections.
- Implemented connection lifecycle management and event driven communication.
- Explored asynchronous networking and stateful backend communication.

Rust Performance Exploration Matrix Computation
- Implemented cache optimized matrix multiplication with threading concepts.
- Benchmarked against NumPy to study memory locality and parallel execution.
- Investigated Rust low level performance optimization techniques.

Custom Language Model Implementation
- Built simplified pipeline for tokenization, preprocessing, and training workflow.
- Studied attention mechanisms and architectural tradeoffs.
- Focused on understanding internal model mechanics.

Education

Army Public School - CBSE Class XII (PCMB) - 85%

Additional Information

Active Arch Linux user experienced configuring development environments and audio systems (PipeWire and OBS). Strong interest in infrastructure engineering, backend systems, and performance optimization. Continuously building systems oriented projects to deepen understanding of networking and distributed architectures.