MOHIB UDDIN

Rust Developer | Systems & WebAssembly Engineer
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PROFESSIONAL SUMMARY

Results-driven Full Stack Developer with 7+ months of professional experience and 5+ years of total development background, pivoting into Rust and systems programming. Proven track record delivering enterprise-grade web applications, computer vision solutions, and IoT integrations with embedded hardware (nRF54L15, BLE, Zigbee). Currently building Rust + WebAssembly projects targeting edge computing and high-performance backend services. Published AI/ML researcher with FPGA deployment expertise. Combines full-stack product delivery skills with systems-level thinking in memory safety, concurrency, and performance optimization.

TECHNICAL SKILLS

Rust & Systems	Rust, Ownership/Borrowing/Lifetimes, Cargo, Tokio (async runtime), Serde, WebAssembly (wasm-bindgen, wasm-pack), CLI tools (clap), Error handling (thiserror/anyhow)
Embedded / IoT	nRF54L15 SoC, Bluetooth LE 5, Zigbee, Thread/Matter, 802.15.4 protocols, FPGA (Ultra96-V2), Vitis AI, Real-time sensor integration
Backend	Python, Django, Django REST Framework, FastAPI, Flask, PHP, RESTful APIs, JWT Authentication, Docker
Frontend	React.js, Next.js, Vue.js, TypeScript, JavaScript (ES6+), HTML5, CSS3, Tailwind CSS
Database & Tools	MySQL, PostgreSQL, Git, GitHub, Linux CLI, Payload CMS, Django CMS, CI/CD pipelines
AI / CV	PyTorch, YOLOv5–v13, Computer Vision, Pydantic AI, Quantization, Pruning, FPGA deployment
Desktop	Tauri (Rust-based cross-platform framework), WebAssembly in browser

PROFESSIONAL EXPERIENCE

Full Stack Developer — Techstack Digital, Karachi

December 2025 – Present

- Enhanced 3+ production CMS platforms (Payload CMS and Django CMS) by developing custom content blocks using Next.js/TypeScript, reducing content management time by 40%
- Engineered IoT integration system connecting 15+ Zigbee (nRF54) sensors for real-time data collection with 99.8% uptime
- Built cross-platform desktop application using Tauri (Rust-based framework) with React frontend for internal tooling
- Optimized React applications with Django REST APIs using Docker containerization, improving deployment speed by 60% and reducing environment-related bugs by 85%
- Architected Inventory Management System (FastAPI + React/TypeScript) handling products, suppliers, invoicing, and real-time payment tracking

Software Engineering Intern — Techstack Digital, Karachi

October – November 2025

- Delivered full-stack application using Django REST Framework with JWT authentication, serving 50+ daily active users with zero security breaches
- Containerized microservices with Docker and automated CI/CD pipeline using Makefiles, reducing deployment time from 45 to 8 minutes

Computer Vision / Embedded Systems Intern — Atlas Hitec, Karachi

June – September 2024

- Implemented YOLOv5 object detection models achieving 97.8% accuracy for industrial steel defect detection with real-time inference at 30 FPS
- Applied pruning and quantization reducing model size by 75% while maintaining 89% accuracy
- Deployed quantized YOLOv5 on FPGA (Ultra96-V2) using Vitis AI, achieving 3x inference speedup with 4-bit quantization

RUST & SYSTEMS PROJECTS

Real-time Collaborative Code Editor | *Rust, WebAssembly, Cloudflare Workers*

- Built editor core in Rust compiled to WebAssembly for near-native in-browser performance
- Implemented real-time collaboration with CRDTs and WebSockets; deployed on edge infrastructure for low-latency global access

- Integrated Tree-sitter compiled to Wasm for syntax highlighting

High-Performance Image Processing API | *Rust, Wasm, Edge Computing*

- Developed image manipulation service (resize, compress, format conversion) running at the edge in WebAssembly
- Benchmarked 10x faster processing vs traditional Node.js services with intelligent CDN caching and rate limiting

Decentralized P2P File Sharing | *Rust, Wasm, WebRTC*

- Built peer-to-peer encrypted file sharing with zero server-side storage using Rust + Wasm in browser
- Implemented file chunking, resume capability, and progress tracking over WebRTC connections

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EMBEDDED & IOT PROJECT

Smart Home Security System | *nRF54L15, BLE 5, Zigbee, Thread/Matter*

- Designed multi-protocol smart home system using Nordic nRF54L15 with BLE and Zigbee
- Optimized fingerprint auth data transfer from Zigbee (3–4s) to BLE (30–40ms) — 100x speed improvement for 5 KB payloads
- Evaluated Matter over Thread for interoperability with Apple, Google, and Amazon ecosystems

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OTHER KEY PROJECTS

- Banking Management System (Django REST, MySQL, Docker): Secure platform with role-based auth, audit logging, 99.9% uptime
- Therapy Booking Platform (Django, PostgreSQL, PayPal): Online booking with integrated payment processing and automated scheduling
- SSL Certificate Monitor (Flask, OpenAI API): Automated monitoring scanning 50+ domains with AI-powered vulnerability analysis

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OPEN SOURCE CONTRIBUTIONS

- Active contributor to Rust ecosystem: Zed Editor, Starship prompt, and Yew (Rust/Wasm web framework)
- Submitted documentation improvements, bug fixes, and feature PRs across multiple Rust repositories

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EDUCATION

Bachelor of Engineering in Computer Systems

NED University of Engineering and Technology, Karachi | Graduated 2025

RESEARCH & PUBLICATIONS

- Published: "A Comparative Assessment of YOLO Nano Architectures for High-Speed and Accurate Steel Detection" in Applied Science and Technology Research Journal (ASTRJ), achieving 97.8% detection accuracy
- Deployed quantized YOLOv5 on FPGA (Ultra96-V2) using Vitis AI with 3x inference speedup via 4-bit quantization maintaining 91% accuracy