Yuvraj Biswal

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About

Programmer who builds high-performance backend systems in Rust, Go, and Typescript. Works in a major way in backend, low-level system programming, and ML infra tooling. I build tools, infra and ML models focusing on performance, accuracy, and developer experience

Experience

Dognosis Jul 2025 - Present
Software Engineer (Rust Backend) *Bengaluru (Remote)*
- Building low-latency backend services in Rust with strong correctness and reliability guarantees.
- Implemented async workflows, internal tooling, and optimized distributed components.
- Worked across backend services, infra, and systems-level integrations.

Systemsway Aug 2025 - Sep 2025
Software Engineer (Go Backend & Infra) *California (Remote)*
- Built a multi-tenant OpenTelemetry observability stack using Go and OTEL Collector.
- Deployed containerized services to GKE using Pulumi.
- Implemented tenant isolation and improved metrics and trace pipelines.

Solana Fellowship Jul 2025 - Nov 2025
Rust & Blockchain Engineer *Remote*
- Selected for Solana Fellowship to build high-performance decentralized systems in Rust.
- Worked on Solana programs, validator tooling, indexing pipelines, and performance tuning.
- Participated in architecture reviews and protocol-level deep dives.

Projects

Bayronik - ML & Astrophysics 2025
- Built a baryonic field emulator combining a Rust N-body PM simulator with a TorchScript U-Net.
- Implemented FFT-based Poisson solvers, CIC mass assignment, and symplectic KDK integration.
- Developed a high-performance Rust TUI for real-time heatmap rendering using Unicode Braille.

Logical Transformer - Symbolic Reasoning Engine 2025
- Designed a transformer-inspired reasoning system using symbolic rules instead of embeddings.
- Implemented QKV-style attention over rule patterns with softmax-based scoring.
- Built variable substitution and multi-layer inference engine.

P2rent - QUIC-based P2P File Transfer 2025
- Implemented a decentralized file transfer system over QUIC with encryption and multiplexing.
- Designed chunk-based protocol with resumable transfers and peer discovery.

Neurox - Numerical Computing Library in Rust 2025
- Built a minimalist tensor library with broadcasting and optimized CPU operations.
- Implemented activation functions and layer abstractions for forward-pass evaluation.

Open Source Contributions

Apache DataFusion 2025 - 2026
- Added **feature-gated fuzz testing** to enable fast local test cycles while preserving CI coverage.
- Implemented **prefix-aware file listing cache** to eliminate redundant object store calls during partition pruning.
- Extended **decimal arithmetic** to support negative and non-integer exponents in `pow()`.
- Enabled **logarithms with non-integer bases** for decimal types with correct fallback behavior.
- Migrated deprecated `structopt` CLI parsing to modern `clap` derive macros.
- Fixed Spark-compatible UDF nullability propagation to correctly reflect input schemas.

Technical Skills

Languages: Rust, Go, Python, TypeScript, Bash, C
Frameworks: Axum, Actix, FastAPI, React, Next.js, Gin, Fiber, Poem
Systems & Infra: Docker, Kubernetes, Pulumi, Redis, Postgres, OpenTelemetry