Ekjot Singh

ekjotmakhija@gmail.com | linkedin.com/in/ekjot-singh-thefirst | github.com/ekjotsinghmakhija
huggingface.co/ekjotsingh | ekjot.me

Academic Background

Vellore Institute of Technology (VIT) **Bhopal, India**
B.S. Computer Science *2024 – 2028*

EXPERIENCE

Metanthropic Lab **Remote**
Founder & Chief Executive Officer *2025 – Present*

- Established an independent AI research organization, architecting the overarching software ecosystem including scalable Next.js backend infrastructure and cross-platform native interfaces.
- Directed the training, specification, and deployment of large-scale mathematical and vision-language models, utilizing PyTorch and C++ to optimize local inference and agentic reasoning architectures.

TealBase **Remote**
Founder & Chief Technology Officer *2025 – Present*

- Architected an open-source Backend-as-a-Service (BaaS) utilizing PostgreSQL and Go, engineering concurrent real-time multi-tenant data synchronization architectures capable of bypassing standard polling.
- Designed and implemented a custom Change Data Capture (CDC) pipeline and WebSocket layer (`realtime-js`), achieving sub-50ms event propagation across distributed clients.
- Enforced zero-trust security protocols by integrating secure JWT-based authentication directly with PostgreSQL Row Level Security (RLS) for fine-grained data isolation.

RESEARCH

SPECIFICATION: Neural Ablation via Attention Refraction (M-NAAR) **2026**

- Formulated an ablation protocol refracting attention from high-entropy tokens to execute robust knowledge deletion while preserving core model reasoning and targeting zero hallucination rates.

Specification for Latent Logic Topology & Soundness-Aware Calibration **2026**

- Operationalized LLMs as engines of Latent Causal Chains to resolve RLVR convergence constraints, introducing the Soundness-Aware Level (SAL) metric to predict post-alignment reasoning outcomes.

Arvi 20B: Democratizing Reasoning with Efficient MoEs **2026**

- Architected an open-weight Mixture-of-Experts reasoning model utilizing sparse routing to approach frontier-level performance on quantitative benchmarks while activating only 3.6B parameters per inference.

PROJECTS

httpfromtcp | *Go, TCP Sockets*

- Built a low-level HTTP/1.1 server entirely over raw TCP sockets, implementing manual protocol parsing, raw memory management, and custom concurrent request handling.

VostSQL | *C, C++*

- Developed a custom object-relational database engine from scratch, implementing strict query parsing, a full execution pipeline, and hardware-optimized disk I/O handling.

Metanthropic CPU Inference Engine | *C++, SIMD, Llama.cpp*

- Optimized tensor operations and memory layout for CPU-bound inference in C++, improving token generation throughput and processing latency for local LLM architectures.

pg_listen | *C, PostgreSQL, libpq*

- Authored an event-driven C library leveraging `libpq` to process asynchronous PostgreSQL `NOTIFY` signals and trigger shell executions with near-zero overhead.

TECHNICAL SKILLS

Languages: Rust, C, C++, Go, Python, TypeScript, SQL, Assembly
AI Architecture: PyTorch, MoE Routing, Vision-Language Models, RLVR, Sparse Autoencoders, Tensor Ops
Systems & Infra: PostgreSQL Internals (RLS, libpq), TCP Sockets, Linux Kernel, WebSockets, Docker