Debojyoti Mishra

GitHub: github.com/DebojyotiMishra
LinkedIn: linkedin.com/in/debojyotimishra
Email: debojyoti.mishra@epita.fr
Portfolio: debojyotimishra.com

Education

EPITA — École Pour l'Informatique et les Techniques Avancées — Paris, France
Bachelor of Science in Computer Science — *September 2023 – July 2026*

- Relevant Coursework: Data Structures & Algorithms, Artificial Intelligence, Linear Algebra, Software Development, Calculus, Probability · **Average Grade**: 16.67/20

Skills Summary

Languages: Python, TypeScript, JavaScript, Java
AI/ML: PyTorch, NumPy, Pandas, scikit-learn, LangChain, LoRA fine-tuning, vector databases (Pinecone, pgvector)
Computer Vision: real-time object detection, anomaly detection, VLM inference (Qwen3-VL, Gemma-4)
Data & MLOps: Docker, Kubernetes, Terraform, AWS, streaming pipelines, model monitoring & retraining
Web & Systems: Next.js, Convex, Clerk, PostgreSQL, REST APIs, WebSocket
Languages Spoken: English (Native) · French (B2 – TCF) · Hindi (Native) · Bengali (Native)

Work Experience

AI Engineering Intern — Paris, France
Tata Consultancy Services — *February 2026 – Present*

- Architected a multi-sensor retail AI platform integrating RFID, Electronic Shelf Label, computer vision, and Volatile Organic Compound sensors to support inventory prediction, freshness monitoring, and customer engagement analytics.
- Built **D.E.B.O.**, a fully local voice AI agent (faster-whisper · Gemma-4 · Kokoro) with tool calling for camera, shelf label control, and 3D in-store customer guidance.
- Developed **ShelfWatch**, a real-time shelf monitoring system powered by Gemma-4 computer vision; polls Axis camera snapshots at configurable intervals, runs on-device inference via Ollama, and surfaces live anomaly alerts in a Next.js 14 dashboard with Convex and Clerk auth
- Reverse-engineered a proprietary ESL vendor API through network traffic analysis and DevTools inspection, documenting undisclosed endpoints and authentication flows to enable programmatic label control across a retail demo environment
- Designed a statistical anomaly detection system on live RFID sensor streams for ghost stock identification, projecting **$15K+ in annual savings** via automated variance alerts; built time-series pickup-velocity heatmaps demonstrating **25-45% profit improvement** from data-driven shelf placement

Retail Operations Intern — Olympic Village, Paris, France
Swadesh by Reliance — *June 2024 – August 2024*

- Served 600+ customers daily during the Paris 2024 Olympics while processing **€5,000+ in daily transactions** with 100% reconciliation accuracy.
- Resolved recurring POS and inventory issues and coordinated with logistics teams to maintain uninterrupted operations during peak traffic periods.

Projects

Historical HTR Pipeline (Python · PyTorch · Qwen3-VL · Transformers)**:**
End-to-end handwritten text recognition pipeline for early modern Spanish manuscripts. Fine-tuned [DAN - Document Attention Network] on *Rodrigo (1545, Historia de España by Ximénez de Rada)* dataset; integrated Qwen3-VL throughout the recognition process — not as post-processing — achieving 4% CER on held-out test set. Pipeline handles layout detection, reading-order recovery, and transcription in a single pass.

DORY (Next.js 15 · TypeScript · PostgreSQL · Tailwind)**:**
Cognitive care companion for dementia and Alzheimer's patients. Culturally adaptive mini-games target distinct brain regions — lyric completion, card matching, autobiographical recall — while an AI companion tracks response quality over time and generates caretaker reports with progress charts and a brain-region activation map.

AskPostgreSQL (Next.js 15 · TypeScript · PostgreSQL · Tailwind · Recharts)**:**
Natural-language analytics platform that converts user questions into SQL queries and generates interactive visualizations from any dataset.