

DHRUVI PAPRUNIA

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Research interests: small & efficient LLMs · RL for LLMs (GRPO) · RAG · multi-agent systems

EDUCATION

Mukesh Patel School of Technology Management & Engineering (MPSTME), NMIMS University, Mumbai, India

B.Tech. (Integrated) in Computer Engineering, six-year program | Cumulative CGPA: 3.88/4.00 2020 – 2026

- Best Researcher Award (Computer Science), MPSTME Student Awards 2026 · Dean's List / Certificate of Merit (top 10%)

Relevant coursework (A+ unless noted): Machine Learning · Deep Learning (A-) · Natural Language Processing · Artificial Intelligence · Image & Video Processing · Probability & Statistics

RESEARCH & PUBLICATIONS (4 IEEE conference papers)

Advancing SLM Tool-Use Capability Using Reinforcement Learning

D. Paprunia, V. Kharidia, P. Doshi. 2025 IEEE 4th World Conf. on Applied Intelligence and Computing (AIC). [DOI](#)

- Designed a capability-aware GRPO reward (zero reward for extraneous text; weighted JSON, tool-name, argument terms) for function calling in SLMs; on 1K held-out samples: 3.4→26.6% (Qwen2.5-1.5B), 6.1→71.1% (Qwen2.5-3B), 0.98→22.0% (Llama-3.2-3B), all 100% valid JSON.
- LoRA (rank 64), 500 GRPO steps, 4K samples from Salesforce xLAM-60k, single T4 GPU.

Towards Actionable Fashion AI: A Holistic, End-to-End Style Recommendation Assistant

D. Paprunia, V. Kharidia, S. Deepak, V. Thoday. 2025 IEEE RCSM (Recent Trends in Computing and Smart Mobility). [DOI](#)

- Fully on-device, privacy-preserving fashion assistant: fine-tuned DINOv2 for Korean seasonal-color classification (61%), Qwen3-7B for body-shape classification (58%), vs a 43% Gemini-2.5-Flash baseline.
- Curated a body-shape dataset (1,482 images, 4 types); rule-based styling guidance including what to avoid; ~5 s on 8GB phones.

LightFusionRec: Lightweight Transformers-Based Cross-Domain Recommendation Model

V. Kharidia, **D. Paprunia**, P. Kanikar. 2024 IEEE SSITCON (Software, Systems and Information Technology). [DOI](#)

- Lightweight cross-domain recommender (DistilBERT text + FastText genre embeddings) over 45K books + 65K movies; MAE 1.99 → 0.69.

Advanced AI-Based Detection and Tracking System (ADTS) for Crime Prevention and Identification in Real-Time Surveillance

A. Kaushik, **D. Paprunia**, I. Wangde, S. Jain, S. Deepak, M. Sankhe. 2025 IEEE ICOCT (Computing Technologies). [DOI](#)

- Contributed to a YOLOv8 + MTCNN pipeline for multi-camera CCTV tracking; detection mAP@0.5 82.6%, tracking IDF1 89.8%, 83 FPS.

EXPERIENCE

Senior Executive – Data Science & Analytics | JioStar (JioHotstar), Mumbai

Jul 2026 – Present

- Building an internal HR AI coach: RAG over company documents, conversation memory, role-based access.
- Built a unified GCP + AWS cloud-cost platform for ~62 billing-enabled projects (backfill, scheduled jobs, SSO/RBAC, audit logging, Slack alerts); ~4 days of manual work down to ~5 minutes; dashboards ~5× faster; adopted by senior management and IT.

Data Science Intern | JioStar (JioHotstar), Mumbai

Dec 2025 – Jun 2026

- Built PKL StudioAI, a natural-language sports-analytics platform over 12 Pro Kabaddi League seasons (~45K records): intent detection, LLM reasoning, validated SQL, multilingual input; ~96–97% on a 150-question test set.
- Agentic TV/OTT recommendation workflow (semantic reranking, multi-agent orchestration) generating LLM-written pitch decks in use by the Sales team.

AI/ML Intern (part-time) | Databyte Systems and Services

Dec 2023 – Dec 2024

- Real-time AI surveillance system (YOLOv8, MTCNN, OpenCV, facial feature matching) across CCTV feeds; this work contributed to the ADTS paper above.

TECHNICAL SKILLS

Languages: Python, Java, C++, SQL, R, JavaScript, HTML/CSS, LaTeX

ML & Deep Learning: PyTorch, TensorFlow, Transformers, scikit-learn, NumPy, Pandas, Weights & Biases

LLMs & RL: GRPO, LoRA, vLLM, RAG, tool use / function calling, multi-agent (CrewAI, AutoGen), prompt engineering

Vision, Data & Cloud: OpenCV, YOLOv8, DINOv2, MTCNN · GCP (Vertex AI), AWS, PostgreSQL/pgvector, MySQL, Supabase

Engineering & Tools: Docker, Kubernetes, REST APIs, Git, GitHub, Playwright, n8n, MCP

LEADERSHIP

Research Head, IEEE RAS (2024–25) · Student Coordinator, Student Research Group (2023–25) · Sub-Head, GDSC (2023–25)