

Chirag Taneja

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EDUCATION

Thapar Institute of Engineering and Technology

BE in Robotics and Artificial Intelligence

Patiala, India

2023 – 2027

EXPERIENCE

Research Intern

June 2025 – August 2025

The University of Queensland

Brisbane, Australia

- Developed AI explainability techniques for deepfake detection systems, enhancing transparency in social media content moderation pipelines
- Built interpretable ML models to generate human-readable explanations for deepfake classification decisions under Dr. Mashuda Glencross and Dr. Suresh Raikwar

PROJECTS

Reisearch: Multi-Agent Deep Research System | *Python, LangGraph, Groq, Tavily*

- Architected a supervisor-worker multi-agent system using LangGraph subgraphs that decomposes vague queries into scoped research briefs, delegates parallel sub-tasks to specialized agents, and synthesizes comprehensive markdown reports
- Implemented a **Scoping Agent** with iterative clarification loops and a **Supervisor Agent** with a thinking tool that dynamically parallelizes research briefs into sub-tasks via LangGraph state transitions
- Added memory checkpointing for workflow persistence, exponential backoff retry systems for API resilience, and LangSmith evals for deterministic agent benchmarking
- GitHub: [ctxnn/deeprsearch-agent](#)

Tri-modal AI Agent (Chat + RAG + Code) | *Python, LangGraph, LangChain, OpenRouter*

- Built a LangGraph state-machine agent with conditional routing across chat, RAG, and code generation modes with Human-in-the-Loop approval gates for safe autonomous execution
- Integrated custom vector embeddings for document retrieval and sandboxed subprocess workspaces for code agent isolation, with conditional edges routing user intent to appropriate modes
- Engineered memory persistence via **InMemorySaver** and a tri-modal intent router using LangGraph nodes and conditional edges
- GitHub: [ctxnn/CKC-agent](#)

GPT-2 Language Model | *Python, PyTorch*

- Implemented and trained GPT-2 from scratch with bfloat16 precision, flash attention, and `torch.compile` for efficient compute, logging experiments via hyperparameter tuning
- GitHub: [ctxnn/gpt-2](#)

POSITIONS OF RESPONSIBILITY

General Secretary | **Mecivions Research Society**

Thapar Institute of Engineering and Technology

January 2026 – Present

Patiala, India

Executive Member | **Rotaract Club**

Thapar Institute of Engineering and Technology

August 2024 – July 2025

Patiala, India

TECHNICAL SKILLS

Agentic AI & Orchestration: LangGraph, LangChain, Multi-Agent Systems, Supervisor-Worker Patterns, State Management, Tool Calling

Languages: Python, C++, C

Machine Learning: PyTorch, TensorFlow, Scikit Learn

LLMs & Inference: Groq, OpenRouter, Hugging Face

Deep Learning: Transformer, MoE, LoRA, Diffusion Models, GAN, VAE, Autoencoder

Retrieval & Search: RAG, Vector Embeddings, Tavily, Web Search Integration

Developer Tools: Git, VS Code, PyCharm, Jupyter, CLI, Linux, LangSmith