Sudipta Nath

AI Engineer | Sydney, Australia

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AI Engineer building LLM, RAG and multimodal systems, with experience in document forensics, multilingual dialogue and full-stack delivery. Master of IT (Artificial Intelligence), Macquarie University, completed July 2026.

EXPERIENCE

AI Engineer Intern - Truuth, Sydney | Completed June 2026

• Built a Python document-forensics pipeline combining ELA heatmaps, PDF structural analysis and Qwen3-VL-235B via AWS Bedrock Converse, with a RAG component.

• Automated false-positive/negative regression benchmarking across 12 versions. Final evaluation: 40/40 modified documents detected, zero false positives (bounded evaluation set; genuine-control count not supplied).

• Diagnosed fine-grained signal loss from vision-encoder patch averaging; changed inputs and decision logic. Wrote R&D handover documentation.

SELECTED PROJECTS

Stix Eatery Platform. Online ordering, rewards/loyalty and admin web platform for a real cafe in Miranda NSW.

Smart Financial Assistant. English, Bengali and Hindi dialogue system using LLaMA 3.1 and Mistral 7B via Ollama; finite-state conversation control and a 36-trial automated evaluation pipeline.

Healthcare NLP System. 8-tab Streamlit application for NER, relation extraction and clinical summarisation with fine-tuned BioBERT/ClinicalBERT.

ROS2 Robot Vision & Navigation. MobileNetV3-Large classifier on a physical robot with SEARCH, ALIGN, APPROACH and ARRIVED states.

RESEARCH & PUBLICATIONS

TRACE: neurosymbolic causal reasoning for autonomous-driving crash scenarios with LTL/SAT verification; supervised by Dr. Xi Zheng, Macquarie University.

NeMA-LC / NeMA-Lite: memory-augmented transformers for long-context reasoning. StressTwinNet: multimodal physiological stress modelling (in progress).

IEEE ETCCE 2020: CNN face-recognition attendance system.

Taylor & Francis 2023: predicting student satisfaction with e-learning.

EDUCATION

Master of Information Technology (Artificial Intelligence)
Macquarie University | Completed July 2026

BSc Computer Science & Engineering
CUET, Bangladesh | 2017-2022

TECHNICAL SKILLS

Python | SQL | JavaScript | LLMs | Prompt engineering | RAG | Multimodal inference | Evaluation pipelines | AWS Bedrock | Docker | Git/GitHub | REST APIs | Streamlit | PyTorch | TensorFlow | scikit-learn | Transformers | OpenCV | ROS2