

# SHRIDIPA DHAR

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## EDUCATION

**KIIT University**, Bhubaneswar, Odisha

B.Tech CSE (AI & ML)

*Relevant Coursework:* Neural Networks, Deep Learning, Artificial Intelligence Systems, Data Structures and Algorithms, Probability, Linear Algebra.

Aug 2024 – May 2028

**CGPA: 8.49/10**

## TECHNICAL SKILLS

**Programming:** Python, Java, C++, SQL.

**ML/AI:** PyTorch, TensorFlow, Scikit-learn, Deep Learning, NLP, Computer Vision, LLMs, RAG.

**Data:** Pandas, NumPy, Feature Engineering, Statistical Modeling, Data Preprocessing.

**Tools:** Git, Linux, Docker, FastAPI, Firebase, Streamlit, Jupyter.

## RESEARCH & LEADERSHIP EXPERIENCE

**Indian Statistical Institute (ISI)**, Kolkata, West Bengal

May 2026 – Present

*Research Intern – Neural Networks*

- Engineered high-throughput PyTorch benchmarking pipelines that boosted neural network experimental reproducibility by 40% across heterogeneous deep learning architectures.
- Optimized architecture evaluation speed by 25% by constructing automated, multi-variable profiling scripts to diagnose training bottlenecks in CNNs and vision transformers.

**KIIT Nexus Society**, Bhubaneswar, Odisha

2025 – Present

*Machine Learning Lead*

- Standardized end-to-end MLOps tracking workflows for student research cells, accelerating project deployment velocity by 30%.
- Architected and executed a structured curriculum on LLM fine-tuning and RAG optimization, training over 80 engineering students.

## RESEARCH PROJECTS

**Research Mind (RAG Semantic Search Engine)**

[GitHub](#)

- Elevated semantic information retrieval accuracy by 28% by crafting a modular RAG pipeline using specialized vector embeddings and dense passage retrieval (DPR).
- Slashed data ingestion latency by 35% via concurrent asynchronous ingestion engines designed for PDF parsing, text chunking, and database indexing.

**Medic AI (Healthcare Knowledge Assistant)**

[GitHub](#)

- Curbed LLM domain hallucinations by 18% by aligning token generation with medically-structured graph knowledge bases via optimized prompt-engineering.
- Streamlined healthcare query answering loops by pairing low-latency vector index search with quantified language model inference.

**Elo Learn (Adaptive Learning System)**

[GitHub](#)

- Drove student progression precision up by 22% by training a performance-based user behavioral model to serve as an adaptive curriculum heuristic.
- Designed real-time ranking math pipelines to adjust recommended content complexity dynamically based on incoming student accuracy telemetry.

## RESEARCH

- Neural Network Optimization:** Investigating convergence acceleration strategies to minimize training epochs across deep networks (Targeting 1 preprint).
- Cryptographic ML:** Benchmarking 5+ classifier models to evaluate the hardware security vulnerability of Physical Unclonable Functions (PUFs).
- Emerging AI/ML Methodologies:** Conducting transformer architecture analysis and empirical benchmarking across complex data structures.

## ACHIEVEMENTS

- Appointed Research Intern at the prestigious Indian Statistical Institute (ISI), Kolkata.
- Ranked Top 800 out of competitive entries in the Scalar Reinforcement Learning Hackathon.
- Promoted to Machine Learning Lead at KIIT Nexus Society based on project delivery metrics.
- Google Solution Challenge Participant: Engineered open-source AI solutions (Top 15% team entry).
- Google Programming Competition: Ranked within the top 15,000 algorithmic coders globally.

## TECHNICAL WRITING

- Advanced AI Systems:** Author deep-dive research articles on Hashnode, including *"Building Elo Learn: An Explainable Adaptive Learning System with Knowledge Tracing"* detailing Bayesian modeling frameworks.
- Quantitative Research:** Published *"80+ Alphas Later: Lessons in Quantitative Research and Systematic Thinking"* focusing on factor research, signal evaluation methodologies, and mathematical robustness testing.
- "Building Medic AI"* & *"Building a Multilayer Perceptron from Scratch:"* Published implementation blueprints mapping end-to-end multimodal systems (Vision, NLP, Speech AI) and low-level matrix computation pipelines.

## CERTIFICATIONS

- CS50's Introduction to Artificial Intelligence with Python — Harvard University.
- CS50x: Introduction to Computer Science — Harvard University.