Shyam Sunder

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Education

Alliance University Bangalore, India
Bachelor of Technology in Computer Science (AI & ML Specialization) *May 2027*

- **CGPA**: 8.2/10.0
- **Key Coursework**: Advanced Deep Learning, Bayesian Statistics, Reinforcement Learning (MDPs), Data Structures & Algorithms (C++), Linear Algebra, Operating Systems.

Technical Skills

Languages: Python (Advanced), SQL (Intermediate), C++, Bash Scripting, R
Machine Learning: PyTorch, TensorFlow, Scikit-Learn, XGBoost, LightGBM, Hugging Face Transformers
Data Engineering: Pandas, NumPy, OpenCV, SQL Alchemy, Apache Airflow (Concepts)
Deployment Tools: Docker, FastAPI, Git, AWS (EC2/S3), Linux Environment, Jupyter Lab
Core Competencies: Computer Vision (CNNs, ViTs), NLP (BERT, LLMs), Bayesian Optimization, Model Inference

Research & Professional Experience

Undergraduate AI Researcher Nov 2024 – Present
Alliance University — Intelligent Systems Lab *Bangalore, India*

- **Research Focus:** Optimizing Convolutional Neural Networks (CNNs) for medical diagnostic imaging.
- Engineered a novel Bayesian Optimization pipeline to tune hyperparameters for **DenseNet** and **MobileNetV2**, resulting in a **15% increase in AUC (0.82 to 0.94)** on the LIDC-IDRI dataset.
- Implemented custom data augmentation strategies (CutMix, MixUp) in PyTorch to handle class imbalance in 10,000+ CT scan images.
- Drafted technical manuscript currently under review at *Scientific Reports* (Nature Portfolio).

AI Developer (Intern equivalent) Aug 2025 – Oct 2025
Privara Labs (Early-Stage Startup) *Bangalore, India*

- Architected an end-to-end **PII Redaction System** to automatically sanitize sensitive legal and medical documents.
- Synthesized a multi-modal pipeline using **TrOCR** for text extraction and **LayoutLMv3** for document understanding, achieving a **98% entity detection rate**.
- Optimized inference latency by **40%** by deploying the model via **FastAPI** on Dockerized containers.
- Designed the system architecture to handle mixed-format inputs (PDF, JPG, PNG) with fault tolerance.

Real-Time Campaign Optimization System | *Python, Kafka, Spark, Docker, PostgreSQL* Sep 2024 – Nov 2024

- Architected a production-grade reinforcement learning system using **LinUCB contextual bandits** to personalize marketing channel selection (Email, SMS, Push) based on user behavior vectors.
- Engineered a high-throughput data pipeline using **Apache Kafka** for event streaming and **Apache Spark** for real-time feature engineering, benchmarking system capacity at **1,000 events/sec** with sub-10ms latency.
- Simulated performance on a synthetic dataset of **50M+ user interactions**, achieving a **140% conversion lift** (2.5% $\rightarrow$ 6.0%) compared to random exploration, validated via Monte Carlo simulations ($p < 0.001$).
- Developed an interactive **Streamlit** dashboard for stakeholders to visualize real-time Bandit regret bounds, channel performance attribution (SHAP), and projected ROI at enterprise scale.

Certifications

- **IBM Data Science Professional Certificate** – Coursera (9-Course Specialization)
- **Reinforcement Learning Specialization** – University of Alberta (Focus on Policy Gradients Q-Learning)
- **Machine Learning (Elite)** – NPTEL (IIT Kharagpur)
- **Microsoft Certified: Azure AI Fundamentals (AI-900)**