Lakshya Gupta

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Education

University of Wisconsin – Madison **Expected May 2028**

B.S. in Computer Science, Data Science, and Mathematics

Relevant Coursework: Data Structures & Algorithms, Linear Algebra, Probability Theory, Statistical & Algorithmic Modeling, Computer Organization & Systems, Real Analysis

Experience

CTO & Co-Founder — TAM **Oct 2025 – Present**

- Co-founded a startup with three co-founders to automate analyst-driven financial workflows (e.g., due diligence, valuation, reporting) using AI-based document intelligence.
- Defined system architecture and led three developers in building FastAPI microservices, async task queues (Celery/Redis), and PostgreSQL pipelines for document ingestion, extraction, and validation.
- Built AI-powered processing pipelines using Tesseract OCR, spaCy/Transformers NLP, and OpenAI GPT models, reducing manual document review time by ∼35% versus baseline processes across 100+ page due diligence packages and multi-entity financial statements.

AI Intern — Webuters Technology **Apr 2025 – Aug 2025**

- Developed a proof-of-concept AI-powered mock interview platform to automatically evaluate candidate responses across speech, vision, and text modalities.
- Implemented multimodal analysis pipelines using Deepgram APIs for STT/TTS, FER (Facial Expression Recognition) for emotion detection, Google Gemini for answer validation, and Pinecone vector search for resume fact-checking.
- Built FastAPI backend with REST endpoints to coordinate asynchronous analysis workflows and generate PDF performance reports using ReportLab, collaborating with senior engineers on system design.

Research Intern — Indian Institute of Technology Delhi **May 2025 – Aug 2025**

- Diagnosed data quality issues in a CNN-based drosophila gender classification pipeline caused by mobile-camera microscopy artifacts, including background noise and inconsistent framing.
- Applied data-centric preprocessing techniques (image cropping, rotation augmentation, quality filtering), improving classification accuracy from ∼82% to ∼88% on validation data.
- Benchmarked tabular models and LLMs (TabPFN, TAPEX, GraPPa, BERT, Gemini 2.5 Pro) on ∼6,000 anonymized UTI samples, achieving 88% accuracy with Gemini while identifying class imbalance and calibration challenges.

Projects

Qiskit Fall Fest — BB84 Quantum Key Distribution – *2nd Place* **Nov 2025**

- Placed 2nd in Qiskit Fall Fest by building a full-stack simulation of the BB84 quantum key distribution protocol with end-to-end key generation, basis selection, sifting, and security validation using FastAPI backend.
- Modeled realistic channel noise and eavesdropping attacks using probabilistic simulations (NumPy), computing quantum bit error rate (QBER) to detect adversarial interception.
- Ran controlled experiments across varying noise and interception rates, analyzing trade-offs between detection sensitivity, error thresholds, and secure key generation efficiency.

Library Management System — Full-Stack Application **Feb 2025**

- Built a library management system using Python and MySQL supporting book cataloging, member registration, check-in/check-out workflows, and transaction history tracking.
- Developed a Streamlit web dashboard with interactive Plotly visualizations for inventory status, member activity trends, and overdue book alerts.
- Designed a normalized relational database schema (3NF, 8 tables) and implemented parameterized SQL queries, input validation, and automated fine calculation for overdue returns.

Technical Skills

Programming Languages: Python, Java, JavaScript, SQL, R

Frameworks & Libraries: FastAPI, React.js, Streamlit, spaCy, Transformers, LangChain

Databases & Infrastructure: PostgreSQL, MySQL, Redis, Celery, Pinecone

AI/ML: LLMs (GPT, Gemini), RAG Systems, OCR/NLP Pipelines, Model Evaluation, CNNs

Tools: Git/GitHub, REST APIs, Data Validation, System Design