Lakshay Bansal

Undergraduate Computer Science student with strong interest in Machine Learning, NLP, and AI research

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EDUCATION

State University of New York, Albany Jan 2024 – Expected May 2026
Bachelor of Science in Computer Science Albany, NY
Relevant Coursework: Machine Learning, Artificial Intelligence, Cryptography, Algorithms, Statistics, DBMS, DSA, Computer Networks, Operating Systems, Automata & Formal Languages, Assembly

TECHNICAL SKILLS

Languages:	Python, Java, C/C++, JavaScript, SQL
Machine Learning:	Supervised/Unsupervised Learning, Deep Learning, Model Evaluation, Feature Engineering
NLP:	Text Classification, Embeddings, Transformers (Conceptual), Tokenization, Vectorization (TF-IDF)
Libraries:	PyTorch, TensorFlow (Familiar), scikit-learn, NumPy, Pandas, OpenCV
Data/DB:	Firebase, PostgreSQL, MySQL, MongoDB
Tools:	Git, Docker, Jupyter, IntelliJ, PyCharm, Vercel

PROJECTS

Face Recognition Attendance System Summer 2024
Machine Learning Research Project | Python, Deep Learning, OpenCV, Firebase
- Designed and implemented a deep learning-based face recognition pipeline for real-time identification and automated attendance marking.
- Built a full ML workflow including data preprocessing, feature encoding, model inference, and performance evaluation.
- Integrated Firebase Realtime Database for live synchronization of student metadata and behavioral attendance data.
- Developed a Tkinter-based administrative GUI and automated Excel reporting using Pandas.
- Conducted experiments to improve recognition accuracy under varying lighting and pose conditions.

Labourie — Labor Marketplace & Fintech Integration Sept 2025 – Nov 2025
Full Stack Developer | Next.js, Prisma, PostgreSQL, Auth.js, Stripe API
- Developed a marketplace with multi-factor identity verification and a secure escrowed payment system using Stripe Connect to ensure 100% transaction integrity.
- Optimized data protection by implementing hashed storage for user info and secure session management via Auth.js.
- Designed relational database schemas and real-time dashboards to track user earnings and platform growth.

RISC CPU & Cache Architecture Simulator Spring 2024
Systems Programmer | Java, JUnit, Custom ISA
- Designed a cycle-accurate 32-bit RISC CPU featuring a 5-stage pipeline and a two-pass assembler.
- Simulated L1/L2 cache hierarchies with Write-Through/Write-Back policies to analyze hit/miss behavior.
- Validated architectural correctness and ALU logic through rigorous JUnit testing, achieving 100% instruction coverage.

Tran Language Interpreter Spring 2024
Compiler Engineer | Java, Recursive Descent Parsing
- Built a complete compiler pipeline (Lexer → Parser → AST → Interpreter) for a custom grammar.
- Implemented semantic analysis to detect type-mismatch and scope errors and authored a comprehensive unit testing suite.

CERTIFICATIONS

Stanford University: Algorithms Specialization, Introduction to Statistics (Coursera)
IBM: Professional Certificate in AI, Introduction to Hardware & Operating Systems

AWARDS & HONORS

2nd Place Winner, AI2EM Hackathon April 2024
University at Albany — Awarded for developing a predictive AI model to optimize resource allocation during emergencies.