Sidharth Bhagat

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EDUCATION

B.Tech in Electrical Engineering | *Indian Institute Of Technology, Jodhpur(India)*   Grad 2027 | CGPA: 8.14
Class XII | *Emanuel Mission School, Kota*   Grad 2023 | 85%
Class X | *Techno India Group Public School, Hooghly*   Grad 2021 | 95%

WORK EXPERIENCE

App Development Fellowship | *SoLA, Comic Studies Dept.*| *GitHub* | *LOR*   January 2025 – May 2025 | Remote
- Worked as an **App Development Fellow** under **Prof. Romi Banerjee, Dept. of CSE**, developing **accessibility solutions** for digital comics using **computer vision and NLP**.
- **Work**: Built custom ML model trained on 250+ panels achieving **97% accuracy** for complex panel detection and improved **OCR from 62% to 94%** using **OpenCV, Python, and deep learning algorithms**.
- **Impact**: Created end-to-end pipeline with **Suno AI NLP/TTS APIs** for comic-to-audiobook conversion at **4 pages/minute**, solving industry gap for varied panel geometries across web comics and manga formats.

Research Intern | *CS Department, IIT Jodhpur* | *LOR*   July 2024 – December 2024 | IIT Jodhpur
- Collaborated with **Prof. Tanmay Nitin Inamdar** on advanced algorithmic research, analyzing **NP-hard optimization problems** including TSP using **dynamic programming and meta-heuristic approaches**.
- Conducted comparative analysis of **traditional vs. modern problem-solving techniques**, evaluating computational complexity and solution quality across multiple algorithmic paradigms for large-scale optimization challenges.

PROJECTS

CIFAR-10 Advanced Object Recognition with Custom CNN Architecture | *PRML Course Project* | *GitHub*   *Feb 2025 – Apr 2025*
Technologies: Custom CNN, CUDA Acceleration, TensorFlow, Keras, Data Augmentation, ZCA, AdaBoost, XGBoost, ANN, BatchNorm
- Developed and trained a custom **8-layer CNN** with a **GPU-accelerated CUDA backend**, integrating **Batch Normalization**, **Dropout**, and **adaptive learning rate scheduling**. Optimized real-time throughput through aggressive **data augmentation** and advanced preprocessing techniques, including **ZCA Whitening** and **Global Contrast Normalization**.
- Achieved **80.5% test accuracy** on CIFAR-10, outperforming classical baselines such as **SVM** and **XGBoost**. Employed **Grid Search** and **Early Stopping** for systematic hyperparameter tuning and robust model optimization.

EncryptiView – Secure Document Viewer | *Self-Initiated Project* | *GitHub*   *June 2025 – Present*
Technologies: Flutter, Python, Firebase, AES-256, DRM, Postman, Firestore, PDFKit, REST API, Cryptography, Custom File Format
- Architected a secure **.eview** file format with **AES-256 encrypted headers**, identity-bound licensing, and device-level access enforcement.
- Engineered a secure **Python backend** deployed on **Google Cloud Platform (GCP)**, featuring tamper-resistant request validation, metadata encryption, and user-specific watermark injection.
- Built a hardened **Flutter viewer** with OS-level screen protection, sandboxed memory handling, and dynamic content shielding for **PDF, DOCX, and TXT** files.
- Implemented robust **multi-layer access control**, including tokenized session authentication, time-based expiry, IP/device binding, etc.

For more projects, visit: Sidharth8100.github.io

SKILLS

- **Programming Languages:** Python, C++, C, Dart, Kotlin, HTML
- **Frameworks:** TensorFlow, Keras, PyTorch, Django
- **Libraries:** NumPy, Pandas, Scikit-Learn, Seaborn, OpenCV, MatPlotLib
- **App Development:** Flutter, Android SDK, Firebase, Google Cloud APIs
- **Utilities & Tools:** Git, GitHub, VS Code, LaTeX, Linux (Ubuntu), Google Colab, Jupyter Notebook, Postman, Excel, Power Point.
- **Knowledge Areas:** Data Structures & Algorithms (DSA), Machine Learning(ML), Deep Learning(DL), Computer Vision(CV), OCR, Text-to-Speech(TTS), Natural Language Processing (NLP), Agile Development

RELEVANT COURSEWORK

- Data Structures and Algorithms, Pattern Recognition and Machine Learning, Linear Algebra and Differential Equations, Differential and Integral Calculus, Probability Statistics and Stochastic Process, Digital Design

ACHIEVEMENTS

- **Departmental Rank: 3** in program B.Tech at the end of First Year.
- **Branch Changer** from Civil Engineering to Electrical Engineering with **8.36 CGPA** at the end of 2nd semester.
- Secured an **A- (Excellent)** in Both **Linear Algebra and Differential Equations** and **Differential and Integral Calculus**.
- **Top 1.5 %ile** in JEE - Mains among 1.2 Million Students appeared.

POSITIONS OF RESPONSIBILITY

- Assistant Head - Varchas'25, IIT Jodhpur.
- Assistant Head - Prometeo'25 (Technical Fest), IIT Jodhpur.