AYAAN CHOUDHURY

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EDUCATION

Indian Institute of Technology Jodhpur   Jodhpur, Rajasthan
Bachelor of Technology in Mechanical Engineering (CGPA: 8.66)   2023 - 2027

RELEVANT COURSEWORK

Introduction to Machine Learning (A), Mechanics of Solids (A), Statistical Mechanics (A), Introduction to Computer Science (A-), Linear Algebra & O.D.E (A-), Introduction to Electrical Engineering (A-),

SKILLS

Programming Languages:	C, Python
Machine Learning & Deep Learning:	Machine Learning Algorithms, Deep Learning Frameworks
Computer Vision:	OpenCV, Image Processing, Object Detection & Recognition, OCR
Libraries & Tools:	NumPy, Pandas, PyTorch, OpenCV, detectron2, Tesseract, PaddleOCR
UI/UX & Graphic Design:	Figma, Adobe Illustrator

WORK EXPERIENCE

Department of Mechanical Engineering   IIT Jodhpur, Rajasthan
Undergraduate Researcher (Supervisor : 🔗 Prof Riby Abraham Boby)   Ongoing

Driving the development of robotics for assembly line automation by integrating *Learning from Demonstration (LfD)* techniques to enable task-specific skill acquisition through human observation, while advancing shared automation frameworks to optimize human-robot collaboration and validate real-world industrial applications.

Department of Computer Science   IIT Jodhpur, Rajasthan
Undergraduate Researcher (Supervisor : 🔗 Prof Palash Das)   Ongoing

Spearheading the development of a *hardware accelerator for generative models (GANs)*, optimizing computational efficiency for resource-constrained devices.

- Implementing model pruning techniques to eliminate unnecessary connections, reducing computation overhead by an estimated **25%** while maintaining model accuracy and also integrating lower precision arithmetic (8-bit or 16-bit floating point) for faster computation.

- Evaluating trade-offs between weight reduction and quantization techniques to maintain a balance between precision and performance, achieving an estimated **15%** decrease in memory usage, while pioneering a student-teacher training framework that reduces memory requirements by an estimated **40%** for low-resource environments.

Kites AI   Gurgaon, Haryana
Intern   May 2024 - June 2024

- Developed and implemented OCR solutions using libraries such as *OpenCV, Tesseract, Detectron2, PaddleOCR*, and *LayoutParser* for processing health and medical invoices in a collaborative project with IIT Delhi and AIIMS, achieving **91.7%** accuracy.

- Enhanced Lipikaar, an OCR library developed by IIT Delhi for indigenous languages, by identifying bugs and implementing improvements that increased character recognition accuracy by an estimated **20%** and improved overall language processing capabilities.

PROJECTS

DemocrEase   https://github.com/ayaancdry/DemocrEase
Supervisor : 🔗 Prof Mayank Vatsa   April 2024
Designed and implemented DemocrEase, a voting system aimed at improving the efficiency and fairness of large-scale elections. Developed in C as part of *Introduction to Computer Science (CSL1010)* course.

AWARDS AND ACHEIVEMENTS

Joint Entrance Examination (JEE)   April 2023
Achieved a percentile of **99.45** and secured an All India Rank of **6,418** in the Mains examination, along with an All India Rank of **9,638** in the Advanced examination.

National Talent Search Examination (NTSE)   Dec 2020
Ranked among the top 60 students in Delhi to receive a scholarship awarded by the Ministry of Education, India.