

# Akash Gupta

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## EDUCATION

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**Indian Institute of Technology - Indian School of Mines**  
*Bachelor of Technology in Electronics and Communication Engineering*

Dhanbad, Jharkhand  
Nov. 2020 – Present

## EXPERIENCE

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**Deep Learning Intern**  
*TransmuteAI Lab*

Dhanbad, India  
May. 2022 - Present

- Open-source project on Ultra-Efficient Deep Neural Network.
- Scientific literature review, implementation of quantization methods and running experiments on bench-marking of model compression for an upcoming scientific paper.

**Machine Learning Intern**  
*RealMaker Research Lab*

South Korea  
Nov. 2022 - Dec. 2022

- Comparative study, implementation and report writing on the performance of a new variation of K-Nearest Neighbour classification against existing variations, on several different datasets, in dealing with extreme data imbalance.

**Research Intern**

Tromsø, Norway  
Sep. 2022 - Nov. 2022

*UiT - The Arctic University of Norway*

- Contributed to the development of novel training pipelines for CNN and vision transformers for handling very large images under resource budget constraints.

**CyberLabs, IIT-ISM**

Jul. 2021 - Present

*Indian Institute of Technology, Dhanbad*

- The official tech club of IIT-ISM, where we read research papers, complete the standard machine learning courses, participate in kaggle contests and various hackathons together to gain diverse experience and knowledge.

## PUBLICATIONS

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**UltraMNIST Classification: A Benchmark to Train CNNs for Very Large Images**

[Link]

*D. Gupta, U. Bamba, A. Thakur, A. Gupta, S. Sharan, E. Demir, D.K. Prasad*

- Nature Scientific Data (Submitted)
- Played a key role in the creation of the UltraMNIST dataset.
- Developed multiple baselines for the standard and budget-aware benchmark.
- Co-authored the research paper and prepared the github repository for reproducing the results. [Link]

## ADDITIONAL PROJECTS

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**Auto-evaluation of Tenders using NLP**

*MCL - Coal India Limited*

- Worked with Prof. Siddharth Agrawal, IIT-ISM on developing an end-to-end model pipeline for tender evaluation to reduce the human requirement in the document verification task.
- Applied existing machine learning models and libraries to develop OCRs to read texts from the scanned pdf documents and structure them into proper format and algorithms to identify the authenticity of the same.

**Customer Feedback Sentiment Analysis and Summarization**

*NLP - self learning*

- A complete github project in the form of a repository which would summarize the feedbacks from customers, classify the comments as positive or negative and attach an average rating for each role in the company.
- Analyzes all the negative feedbacks for each role and gives a short summary for the feedbacks for the role.

**Other Projects**

*Machine Learning and related projects*

- Darbaan: Developed a complete product for ReThinkTech by implementing YoloFaceV5 and YoloV3 on Raspberry-Pi to verify the safety equipment of the workers, identify and automatically mark the attendance of the mine workers at mine sites, so as to ensure safety of the workers, prevent unauthorised entry and reduce child labour at the mine sites.

- Postman app: As a team developed an all in one app for IIT-Dhanbad, that has features like information via face recognition for better bonding among students, library vacancy counter, lost and found section, mess management, time tables, campus map, etc.
- Bosch InterIIT ML challenge - 2022: Developed complete Age and Gender prediction model pipeline using pytorch, computer vision and deep learning, to classify the data, applying super-GAN to improve the result. [\[Link\]](#)
- Flipkart Grid 2.0 Challenge: Created and automated a set of four bots for the challenge using OpenCV. [\[Link\]](#)

## TECHNICAL SKILLS

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**Machine Learning:** PyTorch, Computer Vision, Open-CV, Deep Learning, Tensorflow, Natural Language Processing

**Programming:** C/C++, Python, MATLAB, GNU Octave

**Developer Tools:** Git, GitHub, Docker, VS Code

**Operating Systems:** Ubuntu, Windows

**Languages:** English, Hindi

## KAGGLE

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### American Express - Default Prediction

[\[Link\]](#)

*Bronze Medal*

- American Express' credit Card Default Prediction Competition to predict the probability of Credit Card's amount not being paid by a Customer seeing his Customer Profile and previous 18 months of data.