

# TEJAS AGRAWAL

tej-55.github.io

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## EDUCATION

- **BITS Pilani K K Birla Goa Campus** Goa, India  
*B.E.(hons.) - Electrical and Electronics Engineering; Minor in Data Science; CGPA: 8.12* 2021 - 2025  
*Courses: Machine Learning, LLMs, Foundations of Data Science, Optimization, Deep Learning, Applied Statistical Methods*
- **Shiv Jyoti International** Kota, India  
*Class 12th CBSE; Percentage: 90.4%* 2021
- **Mount Litera Zee School** Gwalior, India  
*Class 10th CBSE; Percentage: 94.6%* 2019

## SKILLS SUMMARY

- **Concepts:** ML, DL, Transformers, LLMs, Natural Language Processing, Computer Vision, Automatic Speech Recognition
- **Languages/Frameworks:** Python, Numpy, Pandas, Scikit-learn, PyTorch, Hugging Face, ESPNet2

## EXPERIENCE

- **CSALT Lab, IIT Bombay** Mumbai, India  
*Research Intern* May 2024 - August 2024
  - One of 15 students selected by IKDD from over 1,000 applicants across the country
  - Worked on advancing ASR systems on low-resource accented speech under the guidance of Prof. Preethi Jyothi
  - Used Task Vector-based model-merging methods to get improved zero-shot performance on unseen accents
- **APPCAIR** Goa, India  
*Student Researcher* July 2023 - May 2024
  - Worked under the guidance of Prof. Ashwin Srinivasan, Dr. Lovekesh Vig and Dr. Gautam Shroff
  - Studied and analyzed the performance of LLM's ability to reason over arguments in debate-like scenarios by simulation
  - Worked on the extension of CRMs, a form of 'explainable neural networks' to learn the priors in the molecule synthesis data using Autoencoders in a self-supervised manner

## PROJECTS

- **Rank-N-Contrast for graphs [GitHub]:**
  - Reproduction of the NeurIPS 2023 Spotlight *Rank-N-Contrast*
  - Evaluating it's performance in graph regression tasks
- **Albert with Perceiver layers from scratch [GitHub]:**
  - Implemented the Albert model to compare its performance when employing the Perceiver layers as compared to the standard Transformer layers
  - Pre-trained both models over the same corpus and evaluated through fine-tuning for the downstream task of paraphrasing using the MSR corpus
- **Code-Mixed Sentence Generation and Language Model Fine-Tuning [GitHub]:**
  - Examined code-mixed sentences with non-formal language for abuse detection
  - Fine-tuned BeRT and m-BeRT to categorize code-mixed sentences and assess their performance

## PUBLICATIONS

- **Graphormer Blogpost [link]:**
  - Accepted at blogpost track in GRAM Workshop @ ICML 2024
  - An introductory blog post for understanding the fundamentals of NeurIPS 2021 paper *Graphormer*
- **CountCLIP [GitHub] [arXiv]:**
  - Reproduction of ICCV 2023 paper *Teaching CLIP to Count to Ten* to improve quantitative understanding of objects in VLMs
  - Made the previously unavailable implementation and the specialized dataset open-source
  - Currently, under-review in ReScience Journal

## VOLUNTEER

- **SAiDL:** Core Member in SAiDL (total 12 members). Volunteered as an instructor for several student-run courses, helped in organizing events such as AI Symposium, Google's AI Booth, etc.
- **Teaching Assistant:** FDCM for the university course CS F437 GenAI

## COMPETITION

- **Moveworks AI Hackathon:** Second position amongst 20 shortlisted teams that participated, having around 80 people in total, in the overnight hackathon conducted by Moveworks.ai for building a copilot system for their website

## COURSES

- Stanford's CS231, CS224N, CS224W, CS229; Coursera's Deep Learning Specialisation