

AAYAN YADAV

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Education

Indian Institute of Technology, Roorkee

Oct. 2022 – May 2026

Bachelor of Technology in Data Science and Artificial Intelligence

Roorkee, India

CGPA : 8.9/10.0

Internships

Proteus | [\[Website\]](#)

July 2024 - Current

- Benchmarked various deep learning methods for AI generated image detection in realistic scenarios and experimenting with them to improve it.

Publications

Benchmarking Object Detectors with COCO: A New Path Forward

Shweta Singh*, Aayan Yadav*, Jitesh Jain, Humphrey Shi, Justin Johnson, Karan Desai

ECCV 2024

[\[Website\]](#)[\[Preprint\]](#)[\[GitHub\]](#)

- * Created refined annotations for the COCO-2017 dataset to mitigate imperfections by leveraging the Segment Anything model and LVIS dataset in a semi-automatic pipeline.
- * Benchmarked 50 pre-trained object detectors on the new validation set, resulting in a larger performance boost for more recent models and ranking flips leading to ranking that aligned more accurately with human judgement.
- * Trained a Mask RCNN and Cascade RCNN models on cleaner annotations. We find that smaller models trained on cleaner annotations perform better than larger models trained on imperfect annotations, demonstrating that a better dataset leads to parameter efficiency.

Projects

MedMatcher | Google Colab, Pytorch, Hugging Face [\[GitHub\]](#)

December 2023

- * Similar Document Template Matching for Medical Dataset
- * Fine-tuned LayoutLMv3 model on custom medical document dataset using weighted cross entropy loss and minibatch gradient descent.

Image Captioning Model | Google Colab, Python, PyTorch, Pandas [\[Colab\]](#)

July 2023

- * Build an image captioning model using transfer learning techniques on the Flickr8k dataset. We fine-tuned a combination of pretrained Inceptionv3 and LSTM with regularization.

Papers We Read | Git [\[GitHub\]](#)

2023-2024

- * Contributed summaries to this open source repository consisting of summaries of papers related to deep learning published in top conferences.

Technical Skills

Languages: Python, C++, SQL, HTML, JavaScript

Technologies/Frameworks: PyTorch, Numpy, Pandas, Matplotlib, Detectron2, Jekyll, ReactJS

Achievements

All India Rank 1353, JEE Advanced 2022 150k+ students in India take this for admission in IITs.

All India Rank 1962, JEE Main 2022 1M+ students in India take this for JEE Advanced eligibility.

All India Rank 993, KVPY(SX) 2022 KVPY is a highly prestigious national fellowship awarded by the Indian Institute of Science to students showing high aptitude in research.

All India Rank 84, WBJEE 2022 150k+ Indian students take this for admission to colleges in West Bengal.

Recipient of NTSE Scholarship given by NCERT, 2021 NTSE is a national-level examination for the secondary school level to identify and recognize students with high intellect and skills.

Extracurricular

Vision and Language Group, IIT Roorkee | Project Head

March 2023 – Present

Deep learning group on campus that organizes open discussions and projects related to deep learning.[\[Website\]](#)

Data Science Group, IIT Roorkee | Member

April 2023 – Present

Data Science and Machine Learning Group on campus that organizes workshops, talks and projects.[\[Website\]](#)

Geek Gazette, IIT Roorkee | Editorial Member

November 2023 – Present

Write articles in biannual magazine[\[Website\]](#)

References

Prof. Justin Johnson | Email: justincj@umich.edu

United States

Assistant Professor at University of Michigan | Research Scientist at Facebook AI Research (FAIR)

Dr Karan Desai | Email: kdesai@umich.edu

United States

Ph.D. in CSE at University of Michigan