Aditya Raj

B.Tech
Electronics and Communication Engineering
National Institute of Technology, Patna

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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
ECE	National Institute of Technology, Patna	7.76	2022-2026
Senior Secondary	Shivam Convent/CBSE	93.2%	2020-2022
Secondary	Don Bosco Academy/ICSE	88.80%	2010-2020

CONFERENCE PAPER(REJECTED)

- **EEG Functional Connectivity Feature-Based Diagnosis of ADHD Using Deep Learning on Raspberry Pi**
  <u>submitted to</u> *International Conference on Signal Processing and Communications (SPCOM 2024) PaperID - 204.*

  - Conducted image classification using 19-channel adjacency matrix with multiple pretrained CNN architectures.
  - Achieved the maximum classification accuracy of 96.12% using GoogleNet.

  Authors: Rakesh Ranjan, Shiva Singh Bagri, **Aditya Raj**, Dr. Bikash Chandra Sahana[PI]
  Affiliation: National Institute of Technology, Patna

EXPERIENCE

- **IIT Jodhpur** — *May 2024 - July 2024*
  Research Intern : SIP@SAIDE 2024 — Remote
  Supervisors: Dr. Bikash Santra and Dr. Dipanjan Roy
  Brain Science and Application: Brain-inspired multimodal image analysis

  - Implemented Image Classification algorithms utilizing different architectural models and achieved maximum accuracy of 53% on test dataset.
  - Working on SEED V and MAHNOB-HCI-Tagging database, to develop a multimodal model by fusing EEG and Image Data.

PROJECTS

- **Image Based Audio Generation| Link** — *June, 2024 - Present*
  Tools: Python, OpenCV, OpenAI CLIP, Hugging Face GPT-2M — Reference Paper: ClipClap, AudioClip
  * Implemented a robust image captioning system leveraging CLIP and integrated it with a PyTorch-based GPT variant
  * Increased caption generation accuracy by 40% through edge enhancement and added it with the original masked noise image for multiple predictions.
  * Implementing text2semantics conversion and semantics2audio synthesis.

TECHNICAL SKILLS

Languages: Python, C/C++, Java
Libraries: tensorflow, scikit-learn, OpenCV, Numpy, Pandas, SciPy
Framework: PyTorch, Keras, NextJs
Web Dev: HTML/CSS, JS, ReactJs
Database: MongoDB
Data Structures & Algorithms: DSA fundamentals

POSITIONS OF RESPONSIBILITY

- **Team Coordinator AI/ML,** Google Developer Students Club , NITP — *August 2023 - June 2024*
- Conducted and managed an open book pure mathematics test for first-year students to select trainees for the team.
- Designed the question paper for the TCF Technical Contest focusing on AI/ML.

ACHIEVEMENTS

- **Regional Mathematical Olympiad (HBCSE, Mumbai)**
  Among top 1% of students from classes 8th-12th in India | Scored 44/102 in RMO 2019 (Class 10th) — 2019
- **METER**
  Got State Rank 7th, from Bihar Region in METER 2017 among 50K+ students. — 2017

OPEN SOURCE

- **JGEC Winter of Code(JWoC)**
  Mentor ID: 6590212849948C6A — Jan, 2024 - Feb, 2024
  * **Guided students as a Mentor in JWOC, for the project 'eagleview' a self-developed Python library for visualizing image datasets.**