Rohith K Bobby

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PROFESSIONAL EXPERIENCE

Machine Learning Intern 03/2023 – 12/2023
IHRD/SBCID Kerala

Newspaper Summarization and Tagging System:

- Built and deployed an automated system to OCR and summarize news articles from local newspapers, reducing analysis time by 75%.
- Engineered natural language processing (NLP) models to extract prominent keywords and tag articles for police review, improving case identification accuracy by 20%.

AI Translation Pipeline:

- Engineered a highly sophisticated AI pipeline for text summarization and translation, delivering a remarkable 25% increase in accuracy for Indic languages compared to major translation tools (as measured by BLEU score), revolutionizing multilingual communication capabilities.
- Empowering multilingual officers to independently conduct interviews and investigations, streamlining communication with diverse communities, this initiative assisted over 20 high-ranking officials.

Research Intern 03/2022 – 03/2023
Aris4D

- Pioneered and designed a highly accurate deep learning model that analyzed petri dish images to predict antibiotic effectiveness, achieving an outstanding 95% accuracy.
- Reduced antibiotic selection time by 30% in a pilot study using the developed AI model.
- Utilized computer vision techniques to segment bacterial colonies and extract morphological features from petri dish images, which cut down model training time by 12%

EDUCATION

Bachelor of Technology in Computer Science 11/2022 – 04/2025
College of Engineering Kallooppara

PROJECTS

Brain Tumor Segmentation And Classification

- Leverages state-of-the-art ResU-Net architecture for ~90% tumor segmentation and classification, exceeding conventional CNN approaches by 15%.
- Reduced false positives by 10% compared to baseline models, potentially improving treatment planning accuracy and minimizing unnecessary interventions.

Image Search with Words

An application to search images in a local library using natural language.

- Enabled users to locate images through plain English descriptions, simplifying search in extensive libraries.
- Optimized for quick results, delivering image matches within seconds based on user descriptions.

Diffusion MNIST: From Noise to Digits

Implemented a diffusion model from scratch to generate images from noise using MNIST digits.

- Developed and trained a custom DDPM to generate MNIST-like digit images from pure noise.
- Enabled controlled image generation by iteratively denoising random noise into coherent MNIST digits.

SKILLS

Programming Languages: Python | C | Rust | Go

Tools: Git | Linux | Docker

Frameworks: PyTorch | Transformers | Numpy | Tensorflow | Django | FastAPI