Rohith K Bobby

rohithkbobby04@gmail.com +91 8590642088 Mavelikara, Kerala, India Rohith04MVK

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
- Constructed a convolutional neural network identifying bacterial growth patterns on 200+ petri dish images, improving the speed of antibiotic susceptibility testing by 15%.
- 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 (Cyber Security) 11/2022 – Present
College of Engineering Kallooppara

PROJECTS

goKyber
A High-Performance and Practical Post-Quantum Encryption Framework
- Developed a high-performance Go implementation of the Kyber KEM, the NIST-selected algorithm for quantum-resistant cryptography.
- Achieved speeds over 2,000x faster than traditional algorithms like RSA and ECC in benchmark tests, reducing operation times from seconds to microseconds.

Diffusion MNIST: From Noise to Digits
Implemented a diffusion model from scratch to generate images from noise using MNIST digits.
- Built a custom Denoising Diffusion Probabilistic Model (DDPM) from scratch, optimizing the model to generate coherent MNIST-like digit images from pure Gaussian noise in under 30 seconds.
- Enabled controlled image generation by iteratively denoising random noise into coherent MNIST digits.

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.

SKILLS

Programming Languages: Python | Go | Rust | C

Tools: Git | Linux | Docker

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