KV Karthikeya

Software Engineer
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Github

Education

B.E in Electronics and Communication **Dec. 2020 – July 2024**
Osmania University - Vasavi College of Engineering , Hyderabad

Experience

Senior Associate Software Engineer, AT&T **July 2024 – Present**

- Tasked with Azure DevOps , python automations , CICD pipelines in one of the most critical applications.
- Utilized image processing techniques and python libraries to automate image deployments and validation processes .
- Enhanced devops tasks using ML and python by automating 40% of tasks, leading to faster and more precise flow.
- Skills : Python, Azure , Linux , TensorFlow | Tools : Azure DevOps , OpenCV.

Internship at AT&T **Jan 2024 – July 2024**

- Worked as a Full stack and Machine learning Engineering intern
- Leveraged MongoDB vector indexes to create a novel RAG based GPT to query database using natural language
- Skills : ML , React , SQL , NodeJS , python , LLMS | Tools : Vite , MongoDB Atlas , Huggingface

Research Experience

Research Assistant, NIT Warangal **July 2023 – Sep 2023**

- Tasked with enhancing object detection capabilities for radar and thermal images.
- Utilized pruning techniques to create a streamlined YOLO architecture suitable for radar and thermal image processing.
- Enhanced accuracy by 20% and reduced model size by 40%, leading to faster and more precise object recognition.
- Skills : Python, PyTorch, TensorFlow | Tools : JuPyter Notebook , OpenCV.

Research Internship , Aarhus University **Jan 2023 – May 2024**

- Designed Vision LLM Models to create 360 view video from a single image frame
- Skills : Image processing , Vision Models , LLMS , python | Tools : TensorFlow , OpenCV

Publications

AI using YOLOv8 for the identification of elbow OCD in ultrasound images
(International Journal of Electrical and Data Communication)

A novel Ai-powered method for the early MRI-based detection of brain tumors
(International Journal of Electronic Devices and Networking)

Deep Learning Models for Real-Time Object Recognition:Transforming Autonomous Vehicles
(ICSCNA 2024)

Artificial intelligence (AI) Algorithm Acceleration via Quantum-Enhanced Neural Networks
(ICPCT 2025)

Natural Language Driven Real-Time Animation using Transformer Pipelines
(CCF Transactions on Pervasive Computing and Interaction 2025 - in progress)

Big Data Clustering Algorithms: Improving Efficiency and Scalability for Pattern Recognition
(Publication under progress)

Vision-Enhanced LLMs for High-Resolution Image Synthesis and Multimodal Data Interpretation
(IEEE Transactions on Imgage Processing - in progress)

Application-Driven ML for Healthcare: Enhancing Predictive Analytics and Personalized Treatment
(IEEE Sensors 2025 - in progress)

Patents

AI Based Breast Tumor Detection Device using Image Scanning
(UK Design Patent)

AI-Generated image processing and ALMS integration for adaptive visual analysis
(Indian Design Patent)

AI and blockchain-based fraud detection device
(UK Design Patent)

Projects

3D - Video Super-Resolution Reconstruction Scheme Based on Bayesian Algorithm and VRT **Sept 2023**

- Upscaled LR 3DV using recursive bayesian networks and novel vision restoration transformers
- Incorporated histogram matching for enhanced intensity distribution while reducing noise using bilateral filters
- Achieved superior performance (98% accuracy) compared to other methods like bicubic interpolation and contemporary Super-Resolution

Interactive Image Generation within the Natural Visual Space **May 2024**

- Applied GANs for user-driven image manipulation while preserving realism through learned natural image manifold.

Night Time Low Illumination Image Enhancement **May 2023**

- Enhanced low-light images using dual-channel prior model and MSRCR inspiration.
- Implemented bilateral filtering techniques for noise reduction.

Visual Art Synthesis using ConvNets **Dec 2022**

- Implemented Neural Style Transfer with a VGG-based model for artistic style synthesis on content images.

A Two-Signal LSTM Network for Instantaneous Noise Cancellation in audio signals **June 2023**

- Designed an approach that combines a short-time Fourier transform and a learned analysis and synthesis basis in a stacked-network approach.

Relevant Coursework

- Machine Learning
- DBMS
- Computer Vision
- DSA
- Linear Algebra
- Speech processing

Technical Skills

Languages | **Tools**: Python, C ,C++, SQL , Linux , MATLAB ,PyTorch, TensorFlow, Numpy, OpenCV.
Technical: Speech & Audio signal Processing, Computer Vision, Machine Learning, Deep Learning , NLP , Signal processing

Academics Accomplishments | Extracurricular

- **Winner of the Annual Ideation contest held by Swayam E-Cell Hyderabad.**
- **Top 15 % percentile in Jee Advanced 2020 , Top 1 % percentile in TS EAMCET 2020 and Top 3 % percentile in GATE ECE 2024 examinations**
- NPTEL Certifications : Digital System Design , Machine Learning
- Contributed to social service initiatives at Don Bosco Social Service, actively volunteering in educational support programs at schools as part of their community outreach efforts.

Organizations

IEEE SB Chairperson
• *IEEE Student Branch (VCE)*

IEEE Member
• *Active member of the IEEE Computer society and IEEE Communication society*

ETSAR Reviewer
• *Acting as a reviewer for the ETSAR Q2 journal for papers in the field of Machine Learning*