Balasri Nitin Reddy **Vanipenta**

COMPUTER SCIENCE, AI & ML STUDENT · DEDICATED TO INNOVATING AND MAKING AN IMPACT

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"Believe you can, persevere, and you're halfway there."

Summary

I am currently pursuing my B.Tech. in Computer Science with a specialisation in Artificial Intelligence and Machine Learning at Gokaraju Rangaraju Institute of Engineering and Technology, located in Hyderabad, India. I started my degree in December 2020, and I am currently in my final year.

I have a strong grip on data structures, enabling me to effectively tackle real-life problems and devise efficient solutions. My areas of greatest proficiency revolve around machine learning, deep learning, and artificial intelligence, and I have successfully contributed to various projects in these domains. Furthermore, I possess extensive knowledge and expertise in cybersecurity, with a focus on penetration testing, which allows me to effectively identify vulnerabilities and protect systems from potential threats. I take great pride in my robust academic background, which encompasses a breadth of programming knowledge, and my substantial contributions to various projects.

Through my experiences, I have not only honed my technical skills but also cultivated strong leadership and interpersonal abilities. I am particularly adept at applying my problem-solving skills to real-world scenarios, where I can analyse complex challenges and develop innovative solutions. I am highly motivated to leverage my expertise in artificial intelligence and machine learning to drive advancements within the academic community and make a significant impact in this field.

Work Experience

AAC - Advanced Academic Center   *GRIET, Hyderabad, India*
PUBLIC RELATIONS, CORE COMMITTEE MEMBER, STUDENT MENTOR   *Jan. 2021 - Present*

- Engaged in numerous Machine Learning and Deep Learning projects as an active student member, showcasing a deep commitment to practical application and hands-on experience in the field.
- Took on the responsibility of imparting knowledge in Machine Learning (ML) and Deep Learning (DL) to fellow junior classmates.
- Served as a guide, offering comprehensive instruction and guidance on various ML and DL concepts with dedication and enthusiasm.
- Actively participated in numerous Machine Learning and Deep Learning projects as a student mentor, aiding in understanding and implementing complex algorithms and techniques.
- Held multiple roles within the academic community, including a student member, mentor, and Core-committee member of the Public Relations wing of the Advanced Academic Center (AAC).
- Fostered a supportive learning environment and contributed to the growth of aspiring individuals.
- Cultivated and strengthened interpersonal and leadership skills through involvement in various capacities.
- Created a positive impact on peers, inspiring them to further explore the fascinating fields of ML and DL.

Cisco Networking Academy   *Remote, India*
CISCO AICTE CYBER SECURITY VIRTUAL INTERNSHIP   *Mar. 2023 - May. 2023*

- During the Cisco AICTE Cyber Security Virtual Internship, I gained practical experience in penetration testing, cryptography, risk management, network security, ethical hacking, security audits, and vulnerability assessment.

Projects

Adaptive Intelligent Defense Ecosystem (AIDE): An AI-Driven Solution for Enhanced Military Operations, Safety, and Decision Making   *GRIET, Hyderabad, India*
MACHINE LEARNING, DEEP LEARNING, CONVERSATIONAL AI, AUTONOMOUS DRONE, BLOCKCHAIN, AR/VR   *Sep. 2023 - Present*

- Building an autonomous drone equipped with Artificial Intelligence (AI) and Computer Vision to enhance search and rescue capabilities for locating and aiding stranded personnel behind enemy lines.
- Developing an autonomous system that can independently survey expansive areas, continuously track identified targets, and pinpoint optimal recovery routes with minimal human direction.
- Creating a Mobile Application featuring a conversational AI assistant, Augmented Reality (AR), and Virtual Reality (VR) for providing first responders with optimized navigation guidance directly to the target's location.
- Implementing blockchain technology to secure drone telemetry and AI guidance for enhanced transparency and trustworthiness in military operations.

TEXT2AV - Text To Audio And Video   *GRIET, Hyderabad, India*
MACHINE LEARNING, DEEP LEARNING, GENERATIVE AI   *Feb. 2023 - Apr. 2023*

- A Generative AI, Machine Learning based system that can convert text to audio and text to video based on input from the user.
- The system analyzes the text and generates high-quality audio using a Text-to-Speech (TTS) model and natural language processing (NLP).
- The system recognizes the keywords in the supplied text input and employs diffusion models to produce high-quality video content.
- I was in charge of developing a complex ML model for text to audio and text to video using a variety of ML techniques and diffusion models.

I-FARM - Technology For Better Yield   *AAC, GRIET, Hyderabad, India*

MACHINE LEARNING, DEEP LEARNING   *Jun. 2021 - Sep. 2021*

- A web application that uses the power of ML and DL to assess trends in the agriculture domain.
- It is a farm management system based on information and technology that locates, analyzes, and controls variability in fields by carrying out crop production practices at the proper time and place for maximum profitability, sustainability, and protection of the land resource.
- Additionally, similar to Uber, our groundbreaking online platform links farmers with farm experts, with the added convenience of a chatbot.
- I was in charge of developing the deep learning model that classifies the crop's health based on pictures of its leaves and developing our innovative online platform, which includes a chatbot for added convenience, to connect farmers with farm experts.

Skills

Programming

OVER 5000 LINES:

Java • Python • Ruby • Javascript • C# • Matlab • C • C++ • Latex

Familiar

Deep Learning • Machine Learning • NLP (Natural Language Processing) • Artificial Intelligence • Computer Vision • Transformer • Capsule Networks • Attention Mechanism • Large Language Models • Variational Autoencoders (VAE) • Reinforcement Learning • Graph Neural Networks (GNNs) • Generative Pre-trained Transformer (GPT) • Deep Reinforcement Learning • Temporal Convolutional Networks (TCN) • Penetration Testing • Web Development • Agile and Waterfall methodologies

Technologies

TensorFlow • PyTorch • Theano • Caffe • MXNet • ONNX • Fast.ai • H2O.ai • Git • React • Azure • Unity • ARCore (Android) • ARKit (iOS) • AWS • Node.js • MySQL • Oracle • OpenCV • DGL • Metasploit • Dask • PyCaret • Horovod • Ray

Publications

E3S Web Conf. 15th International Conference on Materials Processing and Characterization (ICMPC 2023)   *2023*

TEXT2AV - AUTOMATED TEXT TO AUDIO AND VIDEO CONVERSION   *Volume 430, Pages 01027*

- **Authors:** Sanjeeva Polepaka, Balasri Nitin Reddy Vanipenta, Indraj Goud Jagirdar, Guru Prasad Aavula, Ashish Pathani
- **DOI:** `https://doi.org/10.1051/e3sconf/202343001027`

Education

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY (GRIET)   *Hyderabad, India*

B.TECH IN COMPUTER SCIENCE AND ENGINEERING WITH SPECIALIZATION IN AIML   *Dec. 2020 - Jun. 2024*

I began my undergraduate journey in December 2020, embarking on a transformative educational programme that will culminate in 2024. Throughout this rigorous curriculum, I have immersed myself in a diverse array of intellectually stimulating subjects that encompass cutting-edge domains, including: Artificial Intelligence • Computer Networks • Computer Organization • Data Structures • Data Warehousing & Data Mining • Database Management Systems • Design & Analysis of Algorithms • Operating Systems • Web Technologies • Machine Learning • Big Data Analytics • Cloud Computing

Certifications & Achievements

2023	**RED HAT SYSTEM ADMINISTRATION I,** LINUX SYSTEM ADMINISTRATION • SELINUX (Security-Enhanced Linux) • LDAP INTEGRATION • SHELL SCRIPTING FOR AUTOMATION • CONTAINERIZATION	*RED HAT Training*
2023	**NETWORKING ESSENTIALS,** NETWORKING • CONNECTIVITY • DATA TRANSMISSION • INTERNET CONNECTIVITY • WIRELESS SECURITY • CISCO PROFICIENCY	*CISCO Networking Academy*
2023	**USER-CENTRIC COMPUTING FOR HUMAN-COMPUTER INTERACTION,** ELITE CERTIFICATE	*IIT Guwahati NPTEL*
2023	**CYBERSECURITY ESSENTIALS,** AVAILABILITY • CONFIDENTIALITY • ENCRYPTION • INTEGRITY • NETWORK SECURITY	*CISCO Networking Academy*
2023	**AWS ACADEMY MACHINE LEARNING FOUNDATIONS,** ARTIFICIAL INTELLIGENCE: MACHINE LEARNING • AWS	*AWS Academy*
2023	**INTRODUCTION TO OPENSHIFT APPLICATIONS (DO101),** CONTAINERIZATION • DEPLOYMENT • MANAGEMENT • RESOURCE SCALING	*RED HAT Training*
2022	**INTRODUCTION TO INTERNET OF THINGS,** ELITE CERTIFICATE	*IIT Kharagpur NPTEL*
2021	**THE GREAT APPSEC HACKATHON,** FINAL ROUND	*NASSCOM*