Vinay Kumar

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EDUCATION

B.N.M Institute of Technology | B.E. in *Artificial Intelligence Engineering* ***CGPA:8.69*** **Graduation Date:2025**
CMR National Public School | 11th and 12th **Passing Year: 2021**
ST. John's High School | 10th **Passing Year: 2019**

TECHNICAL SKILLS

- **Front-End:** HTML, CSS, React Native, Python (Streamlit, TkInter)
- **Programming Languages:** Java, Python, C, SQL, JavaScript, MATLAB, Apex
- **Cloud Technologies:** Microsoft Azure, AWS

EXPERIENCE

Data Science Intern | KreditBee, India **Sep 2024 – Jan 2025**

- Developed a real-time liveliness detection system using CNNs and transfer learning**,** ensuring high accuracy in biometric authentication processes.
- Optimized model performance by applying hyperparameter tuning, batch normalization, and dropout, enhancing detection accuracy and reducing inference time.
- Deployed liveliness detection system with Docker, integrating it with cloud platforms like AWS for scalable, secure production-ready infrastructure.

Machine Learning Intern | 369 Data Solution PTE. LTD, India **Sep 2023 - Dec 2023**

- Collaborated on an ML project at 369 Data Solution aimed at optimizing protein crystallization for expediting drug discovery processes.
- Developed, trained, and evaluated five deep learning models (e.g., CNNs, ResNet, VGG, Inception, and DenseNet) to identify protein crystals, ultimately selecting the most accurate model with an improvement of over 15% in detection accuracy.
- Deployed the optimal model into production**,** reducing manual effort by 50% and cutting data processing time by 30% using automated image analysis pipelines.

PUBLICATIONS

Contributed as a co-inventor to the development and patent submission of an "**AI and IoT-Based Sprinkler for Automated Agricultural Irrigation,**" focusing on innovative design and automation to enhance sustainable water usage.

Dr. Mahanthesha U, Vinay Kumar, Suzane Fernandes, Shri Ranjani S M & Shrividya K P (2023). "**Inverse Recipe Generation and Food Quality Detection.**" *YMER Journal*, 23(5).

Vinay Kumar, Ankith H Bharadwaj, Mahanthesha U**.** (2024). "**Enhancing Human-Computer Interaction: Integrating Voice Assistants and Gesture Recognition for Innovative Mouse Control.**" *Tuijin Jishu/Journal of Propulsion Technology*, 45(2).

Vinay Kumar, Shri Ranjani S M, Milan Srinivas, Shravya Bhat**.** "***A Hybrid Brain-Computer Interface and Computer Vision-Based Human-Vehicle Collaborative Simulated Driving System****"*. IJIRCCE, Vol. 12, Issue 8, August 2024.

Co-author of ***A Hybrid Reference Architecture Enabling Quantum Computing Capabilities for Cloud Utilization: Toward a Quantum-Science Gateway****,* published in the International Advanced Research Journal in Science, Engineering and Technology (IARJSET), Vol. 11, Issue 8.

Co-author of ***Improving LLM-based Robot Control via Human-Robot Cooperation****,* published in the International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE), Volume 12, Issue 8.

Co-author of ***Breast Cancer Histopathology Classification Using Levenberg–Marquardt Optimised Deep Neural Networks****,* published in the International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE),Vol.13, Issue 8.

CERTIFICATIONS

- **Deep learning specialization by Stanford University, by Andrew NG**
- **Introduction to Deep Learning & Neural Networks with Keras by IBM**
- **IBM Professional Certification: Machine Learning using Python**
- **Microsoft Certification: Microsoft Azure AZ-900**
- **Microsoft Certification: Microsoft Azure AI-900**

AWARDS AND ACHIEVEMENTS

- Showcased creative engineering solutions in the 8th National Level GSSSIT IEEE Project Expo 2024, which took place in Mysore on May 3.
- Placed second in the Smart India Hackathon 2023, demonstrating outstanding inventiveness and problem solving abilities in a cutthroat coding setting.
- Placed in the top five in Atomberg Technologies' Atom-Quest competition at Techfest IIT Bombay, which focused on home automation, showcasing aptitude for creating creative solutions for smart living spaces.
- Finalist in the National Coding Competition (CoDecode, held at IIT Bombay): Finished in the top 4 in the southern zone
- IEEE BNMIT Hackathon 2022 Winner

PROJECTS

Travel Planning App (Plavel) **Mar2022**

- The app considers various modes of transportation and suggests optimal routes for a well-organized journey.
- The React app integrates live location data, adapting your schedule for unexpected delays and ensuring a seamless travel experience.

Drowsiness Detector **Jul2023**

- Using machine learning and real-time data analysis, it detects signs of drowsiness and fatigue, alerting the driver to stay awake and focused.
- Computer vision algorithms within OpenCV are employed to detect facial landmarks, track eye regions, and analyze changes in eye state.

Faculty management system **Sep 2023**

- This project aims to streamline the management of faculty-related information, including personal details, courses taught, schedules, and performance records.
- The project leverages Apache, MySQL, PHP, and front-end technologies to build a user-friendly interface.

Processing, visualization and application development of raw GNSS data on Android Smartphones (GNSS: Global Navigation Satellite System) **Oct 2022**

- Leveraged advanced smartphone chipsets supporting multiple GNSS constellations, including L1 and L5 frequencies, and utilized React Native and GNSS Log to enable enhanced accuracy and integrity in GNSS applications.
- Developed a cutting-edge solution using React Native for processing and visualizing raw GNSS data directly from Android devices, utilizing the newly accessible data streams for improved positioning precision.

Productivity tracker (ProTrack) **Apr 2023**

- ProTrack is a dynamic productivity tracker built using React. This innovative application fosters a sense of community by enabling users to join and create groups.
- Members within these groups can monitor each other's productivity, share achievements, and offer motivation, creating supportive environment for enhanced focus and progress.

VoiceGuard: Jarvis-Powered GPT Voice Assistant Project **May 2023**

- This innovative solution enables users to interact with their devices and applications seamlessly through natural language commands, enhancing accessibility and convenience.
- Utilize Jarvis's speech recognition and GPT's language understanding capabilities to perform tasks and provide information. From setting reminders and answering queries to controlling smart devices, VoiceGuard intelligently executes commands with accuracy and efficiency.