Dheeraj Vinukonda

India 500096
vinukondadheeraj@gmail.com
+91 9100428305

Computer Science Engineer with a focus on **Cybersecurity, Blockchain, and Machine Learning**. Experienced in **IoT systems, algorithmic trading, and applied AI research**, with strong foundations in **ethical hacking** and **secure systems design**. Passionate about developing data-driven, secure, and scalable solutions.

Linkdin

- linkedin.com/in/Dheeraj

Education

Bachelor of Science in Cybersecurity & Blockchain From 2022-2025

SASTRA Deemed University, Thanjavur, TNSeptember 2025

Senior Intermediate Education 2020-2021

Narayana Junior College, Hyderabad, TS March 2021

Accomplishments

- Made a breakthrough by publication in Multimodal Brain Tumor Segmentation in 2025.

Technical Skills

- Experienced in multiple programming languages including Python, C++, SQL, JavaScript, HTML/CSS, and Solidity.
- Softwares : TensorFlow, Linux, Arduino IDE, CNN, Penetration Tools, Ophcrack, VMware, Scikit-learn, LDM, PyCharm.
- Proficient in cross-platform App Development.

Experience

Research Assistant

Bin Liu, Professor at Dalian University of Technology, Dalian, China| February 2025 - Current

- Created customized applications to make critical predictions, automate reasoning and decisions and calculate optimization algorithms.
- Built a fully functional Deep learning model based to take MRI scans for segmenting Brain Tumor.
- Applied loss functions and variance explanation techniques to compare performance metrics.
- Finalized the output of model with remarkable dice score of 0.83.

Cybersecurity Intern

Verzeo EduTech, Hyderabad, TS| August 2022 - September 2022

- Conducted vulnerability assessments using Ophcrack, focusing on GUI vulnerabilities and virtual space attacks.
- Developed a threat management system, incorporating ethical hacking and encryption.
- Gained hands-on experience in cybersecurity through the Cybersecurity Tools and Threat Management project.

CERTIFICATIONS

- Obstacle Avoidance with Voice Controlled Robot - Endorsed by SASTRA UNIVERSITY
- Web Design Development- Validated by IIT Hyderabad
- Graduate Record Examination
- Google Cloud CyberSecurity - Accredit by Coursera
- Python Programming - Approved by Coursea (University of Michigan).
- Start Up China Program 2025 winner.
- IELTS Academic certificate

References

Vinukonda Dheeraj. "*SwinUNETR-CBAM-GAN: A Hybrid Attention and Adversarial Learning Framework for Brain Tumor Segmentation on the BraTS2020 Dataset.*" Accepted for publication, *October 2025* (Publication forthcoming)

- Start up china Program 2025 Winner for Best Marketing Potential Award in Best Business Plan and Final Demonstration -by Dalian Neusoft University of Information & University of QueensLand

LANGUAGES

English - Proficient

Hindi - Proficient

Telugu - Proficient

Tamil - Advanced

Japanese - Intermediate

Chinese (Mandarin)

Projects

SwinUNETR-CBAM-GAN for Multiyear Brain Tumor Segmentation (BraTS 2019 | 2020 | 2021)

- Built a **hybrid 3D segmentation framework** combining *SwinUNETR*, *CBAM attention*, and *GAN-based adversarial loss* to enhance tumor boundary precision and generalization across multi-year datasets.
- Implemented **composite mask visualization**, **mixed-precision training**, and **checkpoint resumption**, optimizing WT, TC, ET Dice metrics.
- Achieved high Dice stability and strong cross-dataset robustness.
- **Paper accepted for publication (Oct 2025).**
  Tools: PyTorch, MONAI, NumPy, Matplotlib, NVIDIA A100 GPU.

ToufAI – AI-Powered Hair Health & Styling App (iOS)

- Developed an AI-driven iOS application for real-time hair health and styling analysis using camera-based inference.
- Integrated pretrained hair segmentation and attribute analysis models to detect balding, greying, and density patterns with on-device inference via **TensorFlow Lite**.
- Built a personalized recommendation pipeline for hairstyle suggestions and scalp-care insights based on extracted hairline and texture features.
- Prototyped the full mobile interface using **React Native** and **Expo Go**, with backend communication via **Flask** and cloud-hosted inference APIs for advanced model processing.
  Tools: Python, TensorFlow Lite, PyTorch, React Native, Expo Go, Flask, CoreML, Xcode.

Cloud-Based Smoke Detection System with IoT using Machine Learning

- Developed an **end-to-end IoT pipeline** integrating *Raspberry Pi*, *MQTT*, and *Flask* for real-time smoke detection and alerting.
- Trained **Random Forest**, **ARIMA**, and **TensorFlow** models on Kaggle environmental data, optimized with *scikit-learn*.
- Deployed **TensorFlow Lite** models on Raspberry Pi 4 via **Docker** for fast **edge inference** and continuous validation.
  Tools: Python, TensorFlow, Scikit-learn, Bash, Google Colab, Raspberry Pi, Docker.

Forecasting & Trading Stable Cryptocurrencies using Machine & Deep Learning

- Designed a **predictive trading framework** employing *Facebook Prophet*, *ARIMA*, *SVR*, *BI-LSTM*, *UNI-LSTM*, and *Stacked LSTM* for stablecoin trend forecasting.
- Engineered **algorithmic trading strategies** using predictive analytics on historical data for optimized decision-making.
- Evaluated model efficacy with **RMSE** and **R^2**, tuned for real-time market deployment.
  Tools: Python, TensorFlow, Scikit-learn, Pandas, NumPy, Matplotlib.

Image Classification & Explainable Detection of AI-Generated Synthetic Images

- Generated **60 k synthetic images** via *Latent Diffusion Models (LDM)* aligned with *CIFAR-10*'s 10 classes.
- Trained a **CNN** achieving **92.98 % accuracy** distinguishing real vs AI-generated images.
- Applied **Grad-CAM** for explainability, identifying subtle **background artifacts** influencing classification.
  Tools: TensorFlow, CNN, LDM, Grad-CAM, NumPy