

SMITHA REDDY

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[Homepage](#) | [LinkedIn](#) | [GitHub](#)

RESEARCH INTEREST

My research interests lie in deep learning, computer vision and multi-modal learning. I am particularly drawn to exploring how vision-language models can enable richer scene understanding and more intelligent systems.

EDUCATION

Presidency University

Bengaluru, India

B.Tech in Computer Science and Communications Engineering - GPA: **3.89 /4.0**

Nov 2023

Honors: Gold Medalist & Highest GPA in cohort

RESEARCH EXPERIENCE

Manipal Institute of Technology

Bengaluru, India

Research Scientist Intern

May 2024 - Present

- **Designed conditional GAN augmentation pipeline** to address data imbalance, reducing manual data collection costs by **~80%**
- Led a **3-member-team** to benchmark and fine-tune **CNN architectures** (EfficientNet, ResNet, VGG) on medicinal leaf image datasets
- **First author** contributor on a journal manuscript currently under review

Educational Robotics Center, NTNU

Taipei, Taiwan

Robotics Intern

Oct 2024 - Mar 2025

- Investigated **deep reinforcement learning literature** on policy optimization and sim-to-real transfer methodologies for humanoid robots
- Ran **experimental simulations** with weekly research reviews to optimize robot behavior and training workflows
- Built custom **URDF models** and developed kinematics, ROS controllers, and motion-planning pipelines using **ROS2 and Gazebo**

Presidency University

Bengaluru, India

Research Assistant

Jan 2023 - April 2024

- Developed **deep learning pipelines** for cervical cell classification, achieving **99.5% test accuracy** on SIPKaMed dataset, surpassing existing benchmarks
- Evaluated **segmentation and classification architectures** for medical imaging workflows on cervical cell datasets
- Conducted psychological survey study on undergraduate mental health post-COVID, **presented findings at IEEE** International conference
- **Co-authored multiple journal publications** and performed experimental reproducibility testing on trained models

PROJECTS (Selected)

Herb-GANNet | TensorFlow, Keras, Python, OpenCV

- Developed **GAN-based augmentation** method for highly imbalanced datasets

Iris - LLM based Health Assistant | Python, scikit-learn, TensorFlow, NLTK | [Project](#)

- Developed a disease prediction pipeline integrating **Machine Learning classifiers with LLM reasoning & conversational AI**

Tiny Shakespeare GPT | *PyTorch, Python, NLP* | [Project](#)

- GPT language model from scratch implementing **transformer**, **self-attention**, **multi-head attention**, and **positional encoding mechanisms**

YOLO Object Detection | *YOLOv5, PyTorch, OpenCV, Streamlit* | [Project](#)

- Developed **yolov5** based object detection model for identifying vehicles, signboards, etc on road

PUBLICATIONS

HerbGANNet: Addressing Class Imbalance in Medicinal Leaf Classification Using GANs and Weighted Loss (*Under Revision*)

Smitha S Reddy, Vaishnavi K, Sapna R

IoT and Edge Computing Security: Essential Aspects of 6G Networks

Smitha S Reddy, Sapna R

In: *6G Cyber Security Resilience: Trends and Challenges*, Springer, 2025

CerConvNet: Cervical Cancer Cells Prediction Using Convolution Networks

Pallavi M, Smitha Patil, Madhu Sudhan M V, **Smitha S Reddy**, Vaishnavi K.

Informatica, 2024

CONFERENCES

Offline Exams in an Online World: Psychometric Evaluation of Depression Anxiety Stress Scale using DASS-21 amongst UG Scholars post COVID

Smitha Reddy S

IEEE Conference on New Frontiers in Communication, Automation, Management and Security, Bengaluru, 2023

Voice Assistant For Disease Diagnosis Using Machine Learning and Natural Language Processing

Smitha Reddy S, Shilpa N, Thanusha M, Sowhardh C K

National Conference on Recent Advancements and Challenges in Information Technology, Bengaluru, 2023

SKILLS

Programming Languages: Python, Java, SQL

ML/DL Frameworks: TensorFlow, Keras, Scikit-Learn, PyTorch, OpenCV, NLTK, LangChain

Libraries & Tools: Numpy, Pandas, Matplotlib, Seaborn, Git, ROS2

Languages: English (Proficient), Hindi (Proficient), Telugu (Native), Korean (Beginner)

AWARDS & RECOGNITIONS

- **TEEP Scholarship**, Taiwan Ministry of Education, 2024
- **Abdul Hameed Memorial Gold Medal**, Presidency University, 2023
- **Best Student**, SBMJJC, 2019
- **Best Outgoing Student**, William Richards, 2017