

SMITHA REDDY

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

EDUCATION

Presidency University

B.Tech in Computer Science and Communications Engineering - CGPA: **9.3/10**

Honors: Gold Medalist & Highest GPA in cohort

Bengaluru, India

Nov 2023

TECHNICAL SKILLS

Languages: Python, Java, SQL

Libraries & Frameworks: Numpy, Pandas, TensorFlow, Keras, PyTorch, Scikit-learn, OpenCV, NLTK, Matplotlib, ROS2, Gazebo

Tools: Git, SageMaker Studio, VS Code, Power BI

RESEARCH INTERESTS

Machine Learning, Computer Vision, Multimodal Learning, Deep Reinforcement Learning, Agentic AI

EXPERIENCE

Educational Robotics Center, NTNU

Research Intern

Taipei, Taiwan

Oct 2024 - Mar 2025

- Built custom **URDF models** and developed kinematics, ROS controllers, and motion-planning pipelines using **ROS2 and Gazebo**.
- Conducted **simulation experiments** and weekly **research progress reviews** with PI to refine robot behaviour and training pipelines.
- Reviewed **deep reinforcement learning** literature to understand policy optimization and sim-to-real transfer workflows for humanoid robotics.

Manipal University

Research Intern

Bengaluru, India

May 2024 - Present

- Designed conditional GAN augmentation pipelines for imbalanced datasets, reducing manual data collection costs by **~80%** and improving classification.
- Led a team of three to test and fine-tune CNN architectures on large-scale medicinal leaf datasets.
- First author** contributor on a journal manuscript currently under review.

Presidency University

Research Assistant

Bengaluru, India

Jan 2023 - April 2024

- Evaluated **segmentation and classification architectures** for medical imaging workflows on cervical cell datasets.
- Achieved **99.5% test accuracy** on SIPKaMed dataset by fine-tuning **SOTA deep learning models**, surpassing existing benchmarks.
- Co-authored **journal manuscripts** and conducted experimental reproducibility testing on trained models.

PROJECTS (Selected)

Herb-GANNet | TensorFlow, Keras, Python, OpenCV

- Reduced validation loss by **27.15%** on imbalanced datasets using cDCGAN augmentation pipelines

Diablo Bot | ROS2, Python, Gazebo, MoveIt [\[Repo\]](#)

- Built ROS2 workspace with custom URDFs and controllers enabling robot kinematics and motion planning

Iris - LLM based Health Assitant | *Python, TensorFlow, NLTK* [\[Repo\]](#)

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

PUBLICATIONS

[1] **Smitha S Reddy**, Vaishnavi K, Sapna R. Herb-GANNet: Synthetic Data Generation through Conditional GANs for Improving Accuracy in Medicinal Leaf Classification (*in publication*)

[2] **Smitha S Reddy**, Sapna R. (2025). IoT and Edge Computing Security: Essential Aspects of 6G Networks. In: Gururaj, H. L., Ravi, V., Shreyas,J., & Pavithra, N. (eds) *6G Cyber Security Resilience: Trends and Challenges*, Advanced Sciences and Technologies for Security Applications. Springer, Pages 189-206

[3] Pallavi M, Smitha Patil, Madhu Sudhan M V, **Smitha S Reddy**, Vaishnavi K. (2024). CerConvNet: Cervical Cancer Cells Prediction Using Convolution Networks. *Informatica Vol 48(3)*, 439-454

AWARDS & RECOGNITIONS

- TEEP Scholarship, Taiwan Ministry of Education, 2024
- Abdul Hameed Memorial Gold Medal, PU, 2023
- Best Outgoing Student, SBMJJC, 2019