

Likith S G

SWE

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SUMMARY

I am a motivated sophomore at RV University, passionate about computer science and engineering. With a solid foundation in programming, algorithms, and software development, I thrive in fast-paced environments due to my quick learning ability and adaptability to new technologies. Known for strong problem-solving skills and a proactive approach, I excel in collaborative settings and am eager to bring fresh perspectives and innovative solutions to the field of computer science.

SKILLS

- Programming Languages:** C, C++, Java, Python, Solidity, Bash
- Machine Learning:** Reinforcement Learning, Computer Vision, Algorithms, LangChain, LangGraph
- Web Development:** Web Design, HTML, CSS, JavaScript
- DBMS:** MySQL, MariaDB, MongoDB
- Embedded Systems:** RP2040, Microcontroller Programming
- Tools:** VS Code, Spyder, Jupyter Notebook, MySQL Workbench, Mongo Compass, Arduino, GitHub, DockerHub, AWS
- Extracurriculars:** Public Speaking, Debate, Leadership, Critical Thinking, Reflective Thinking

EXPERIENCE

ML Intern

CVCSI (Center for Visual Computing and Sustainable Intelligence)

Jun '24 — Present

- Developed MPS2U, an advanced dataset condensation method that reduced training time from 4 hours to 5 minutes while maintaining high accuracy.
- Optimized synthetic dataset selection using Mutual Information and Reinforcement Learning, improving data quality and model performance.
- Engineered and trained ConvNet models for multiple datasets (MNIST, CIFAR-10/100), enhancing preprocessing and visualization pipelines.
- Benchmarked MPS2U against MPS2, Gradient Matching, and Mutual Info, demonstrating superior efficiency and scalability on complex datasets.

EDUCATION

RV University (BTech in Computer Science and Engineering)

Sep '23 — Present | Bengaluru, India

Reva Independent PU College (PCMC)

Aug '21 — Mar '23 | Bengaluru, India

Jain Heritage School (CBSE)

Jun '09 — Mar '21 | Bengaluru, India

PROJECTS

1. Dataset Distillation (MPS2) ([Project Link](#))

- Description:** Developed a versatile script supporting multiple datasets (MNIST, Fashion-MNIST, CIFAR-10, CIFAR-100) with early stopping to prevent overfitting. Features a parameterized CNN model and RL agent with SoftMax activation and categorical cross-entropy loss.
- Performance:** Achieved 75% test accuracy on MNIST and 31% on CIFAR-10. Demonstrates efficient performance with a low computational load, requiring only 20 minutes of training using an integrated GPU.
- Comparison:** Compared to Gradient Matching, which has higher accuracy but requires 4 hours and significant computational resources. This offers a more resource-efficient solution with significantly shorter training time.

2. Real-Time Sign Language Translation ([Project Link](#))

- Description:** Developed a real-time sign language translation model using deep learning techniques to identify and classify hand gestures. The model takes a frame as input and predicts the corresponding sign label.
- Dataset Details:** Created a custom dataset using datacollection.py, followed by augmentation using dataAug.py, generating 7,000 images across different sign classes. The dataset consists of 4,900 training images and 2,100 test images.
- Technologies Used:** Python, TensorFlow, Keras, OpenCV, Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), Vision Transformers (ViT).

3. Heart Failure Risk Analysis ([Project Link](#))

- Description:** Data analysis project focused on heart failure risk factors, utilizing a dataset from the ML repository lab. The project involves identifying major and minor risk factors, performing comprehensive data cleaning and preprocessing, and generating visualizations for insightful inference.
- Technologies Used:** Python (for data analysis, cleaning, preprocessing, and visualization).