Girish G Hegde

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Objective

Motivated and curious data science researcher currently pursuing an Integrated BS–MS at IISER Thiruvananthapuram. Passionate about artificial intelligence, deep learning, and scientific computing. Experienced in building generative models (VAEs, PixelCNNs) and applied machine learning systems for science and society.

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Education

Indian Institute of Science Education and Research (IISER), Thiruvananthapuram 2022–Present
Integrated BS–MS in Natural Sciences
Relevant Coursework: Machine Learning, Deep Learning, Artificial Intelligence, Scientific Computing, Algorithms, Operating Systems.

Seshadripuram Composite PU College, Bengaluru 2018–2020
PUC – Science Stream

BP Indian Public School, Bengaluru 2008–2018
Grades 1–10

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Research and Projects

Generative Image Modeling using VAEs and PixelCNNs IISER TVM, 2024–Present
Working under Dr. Alwin Poulose on efficient generative architectures for compact image synthesis. Investigating latent representation quality and attention mechanisms for improved reconstructions.

Detecting Media Bias using Machine Learning and Deep Learning
Developed NLP pipelines using TF–IDF, BERT, and CNN models to classify news media bias. Applied model interpretability tools to understand linguistic bias cues.
GitHub: github.com/Girishgh7/DSC_325

Protein Sequence Imputation using ProtBERT and Autoencoders
Utilized BERT-based embeddings and deep autoencoders to impute masked amino acids. Benchmarked imputation accuracy on standard bioinformatics datasets.

Efficient and Compact Image Generation Models
Built and compared VAEs, PixelCNNs, and attention-based variants for efficient generative modeling. Evaluated reconstruction error and sample quality.
GitHub: Image Models Repo

Stock Price Prediction using LSTM Networks
Designed LSTM architectures for time-series forecasting on stock data. Achieved low RMSE with temporal pattern visualization.
GitHub: Stock Model Repo

Brain Tumor Detection from MRI Scans
Built CNN pipelines for binary tumor classification. Focused on image preprocessing, augmentation, and training stability.
GitHub: MRI Repo

Genie Jar – AI PDF Q&A Web App
Developed an AI-powered app using Streamlit and LangChain to query PDFs with contextual responses via OpenAI/Groq.
GitHub: Genie Jar Repo

Meat Leaf – Synthetic Biology Research
Explored cell culture and scaffolding approaches for lab-grown meat using synthetic biology.
Website: MeatLeaf Project

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Technical Skills

Programming Languages: Python, R, Julia, C, C++
Tools & IDEs: Git, Jupyter, LaTeX, VS Code, Streamlit
AI/ML Frameworks: PyTorch, TensorFlow, Keras
Specialized Areas: CNNs, VAEs, Reinforcement Learning, Predictive Modeling, Data Visualization, Scientific Writing

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Leadership and Volunteering

- **Placement Cell, IISER TVM** – Student Coordinator (2023–Present)
- **CSIT Club, IISER TVM** – Events and Content Team Member (2022–Present)
- **HCIT Club** – Outreach and Logistics Team (2023–Present)
- **Student Council** – Health and Hygiene Representative (2022–23)

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Research and Lab Skills

Scientific Writing, Deep Learning Model Evaluation, Visualization, Basic Cell Culture Techniques, Event Coordination, Team Leadership

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Languages

English (Fluent), Kannada (Fluent), Hindi (Intermediate)

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Hobbies

Table tennis, trekking, cycling, adventure walks, and running.