VASUDEV R

R&D Engineer – AI/ML

📍 Ernakulam, Kerala   📞 +91 6282563293   ✉ vasudevrnair1997@gmail.com

🔗 GitHub: https://github.com/v-dev688   🔗 Medium: https://medium.com/@vdrss3

PROFESSIONAL SUMMARY

R&D Engineer in AI/ML with 2 years of experience across Healthcare and Automotive domains, working with US-based clients. Specialized in converting research papers into production-ready ML solutions. Strong expertise in Python, PyTorch, deep learning, and biomedical AI, with hands-on experience in foundation model adaptation, perturbation modeling, and collaborating with cross-functional scientific teams.

TECHNICAL SKILLS

Machine Learning & Deep Learning: Supervised/Unsupervised Learning, Neural Networks, CNNs, RNNs, Transformers

Core Skills: Data Preprocessing, Feature Engineering, Model Evaluation, Optimization, Performance Tuning

Frameworks: TensorFlow, Keras, PyTorch, scikit-learn

NLP & CV: Text Classification, Embeddings, RAG Fundamentals, Tokenization, Image Classification, Object Detection

AI/ML Algorithms: XGBoost, Random Forest, SVM, Clustering, Dimensionality Reduction

Deployment: Model Packaging, REST API Deployment, Production ML Pipelines

Software Engineering: Python, Data Structures, Algorithmic Thinking

Tools: Git, Jupyter Notebook, Linux, Docker

Strengths: Analytical Thinking, Problem Solving, Clear Technical Communication

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WORK EXPERIENCE

R&D Engineer – AI/ML   *Feathersoft Info IT Solutions, Kochi, Kerala | Aug 2024 – Present**

Drug Target Discovery using Biomedical Foundation Models (Provisional Patent Submitted)

- Architected an ML workflow using biomedical foundation models to identify cancer-specific DEGs and co-expression patterns within the tumor microenvironment.
- Collaborated with biomedical experts to refine problem scope, data strategy, and validation criteria.
- Designed scalable pipelines for gene prioritization, statistical evaluation, and biological interpretation.
- Delivered insights that identified high-value therapeutic targets, leading to a provisional patent submission.

Synthetic Lethality Gene-Pair Prediction (POC → Production)

- Designed and delivered the end-to-end perturbation analysis module for TBDSS, covering architecture, implementation, validation, and production-readiness.
- Worked closely with biomedical scientists and computational biologists to translate research requirements into a robust pipeline.
- Provided technical guidance to teammates on workflows, module structure, model integration, and validation.
- Built scalable workflows extending foundation models from single-gene to pair perturbation analysis.
- Achieved 80–95% agreement with Perturb-seq datasets (validated by Dr. Sana Munquad).
- Coordinated with DevOps for integration, artifact versioning, and reproducibility.
- Contributed to MLOps practices including experiment tracking and pipeline reproducibility.

Virtual Cell Challenge – Gene Expression Reconstruction (Arc Institute)

- Developed a custom decoder architecture for reconstructing gene expression from foundation-model embeddings.
- Resolved rank-encoding constraints through architectural improvements.
- Strengthened the VCC pipeline with high-fidelity DEG reconstruction outputs.

R&D Engineer Intern – AI/ML (Virtual Simulation)   *Continental Automotive Pvt Ltd, Bengaluru | Aug 2023 – Aug 2024*

Photorealistic Driving Scenario Reconstruction

- Built ML pipelines to recreate real-world road scenes inside CarMaker simulation software.
- Developed a vehicle classification model enabling accurate dimension inference and 3D reconstruction of Indian vehicles.
- Improved realism in simulated environments by addressing dataset limitations and angle-view reconstruction challenges.

EDUCATION

- **M.Tech – CSE (Deep Learning & NLP)** — Amrita Vishwa Vidyapeetham, Coimbatore (2022–24) | CGPA: 8.2
- **B.Tech – CSE** — Vishwajyothi College of Engineering (2016–20) | CGPA: 7.4

CERTIFICATIONS

- Post Graduate Programme in Data Science and Engineering
- MERN Stack Certification — NACTET Certified