BALAMURUGAN P G

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Career Objective

AI/ML Engineer who builds and deploys grounded, auditable Generative AI and multi-agent systems that reduce model risk. Built a page-cited IPO research agent, a deployed chest X-ray classifier with Grad-CAM explainability, and VeraScan, an open-source contamination-detection library on PyPI, so teams get evidence-based AI instead of black-box experiments.

Educational Qualification

Undergraduate
Course: Bachelor of Engineering in Computer Science and Engineering
University: Anna University
College: Nehru Institute of Technology, Coimbatore
Period: 2023 – 2027 CGPA: 9.06 / 10 (up to 6th semester)

12th Standard
Board: Tamil Nadu State Board
School: Sourashtra Higher Secondary School, Ramanathapuram
Period: 2022 – 2023 Percentage: 80%

10th Standard
Board: Tamil Nadu State Board
School: Sourashtra Higher Secondary School, Ramanathapuram
Period: 2020 – 2021 Result: PASS (COVID-19 batch)

Skills

Programming: Python, SQL, C, Julia
Generative AI: LLMs, LangChain, LangGraph, LlamaIndex, RAG, Multi-Agent Systems, Prompt Engineering, Vector Databases, Hugging Face
AI/ML: Machine Learning, Deep Learning, PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy
Backend: FastAPI, Streamlit, REST APIs, Pydantic, React, Supabase
Cloud & Tools: Docker, Git, Linux, AWS, Google Cloud, Oracle Cloud, PostgreSQL, FAISS, pytest

Projects

Bull/Bear Autopilot – Indian IPO Research Agent | *Python, Multi-Agent, Pydantic, Telegram, PDF Parsing* **Aug 2026**
GitHub: github.com/balamuruganpg/bull-bear-autopilot

- Built an unattended multi-agent system that discovers live and upcoming Indian IPOs, extracts page-cited facts from offer documents, and delivers audited bull/bear verdicts to Telegram with no human in the loop.
- Grounded every later stage on a numbered, page-cited Fact list instead of chunk similarity search, so claims must argue from document evidence rather than model memory.
- Ran adversarial bull and bear agents on the same facts, then applied a deterministic fact-checker the model cannot overrule; confidence is arithmetic over supported, partial, and unsupported claims.
- Verified the full pipeline end-to-end (discovery through delivery) with offline dry-runs, scheduled execution, and 568 unit tests covering fact extraction and grounding.

VeraScan – Train/Eval Contamination Detection | *Python, MinHash/LSH, FAISS, CLI* **Aug 2026 – Present**
GitHub: github.com/balamuruganpg/verascan PyPI: `pip install verascan`

- Built an open-source library to detect train–eval leakage for LLM fine-tuning, RAG evaluation, and benchmark integrity using exact, 13-gram, fuzzy, and semantic matching.
- Implemented leak-free dataset splitting that iteratively purifies eval splits until exact, fuzzy, and semantic overlap with train is zero.
- Added public-benchmark audit against MMLU, GSM8K, and HumanEval, plus HTML reports with word-level diffs and a CLI flag to fail CI when contamination exceeds a threshold.
- Shipped as an installable package with optional semantic extras (sentence-transformers + FAISS), type-safe APIs, and cleaned-eval export for downstream training.

LungScan AI – Chest X-ray Disease Detection | *DenseNet121, TensorFlow, Grad-CAM, FastAPI, React, GCP* **July 2026**
GitHub: github.com/balamuruganpg/LungScan-AI-Chest-Xray-Detection Live: medrag.in

- Developed an end-to-end medical AI system that classifies chest X-rays into five classes using DenseNet121 transfer learning, achieving 86–88% test accuracy.
- Implemented Grad-CAM explainability, top-3 predictions, confidence warnings, human-review flags, and X-ray image validation.
- Built a full-stack application using FastAPI, React, and Supabase with Patient, Doctor, and Admin roles, authentication, scan history, and analytics.
- Compared DenseNet121, EfficientNetB3, and EfficientNetV2L and deployed the selected model on Google Cloud Compute Engine with Nginx, HTTPS, and systemd.

Experience

AI/ML Intern **May 2026 – Aug 2026**
Neo Zeno Talent (Remote)

- Gaining practical experience in Artificial Intelligence and Machine Learning through guided projects and assignments.
- Worked with Python, Pandas, NumPy, and Scikit-learn for data preprocessing and basic machine learning tasks.
- Learned model training, evaluation, and data analysis techniques using real-world datasets.
- Collaborated remotely with mentors and team members while improving technical and problem-solving skills.

Automotive AI Innovation Intern **Mar 2026 – Apr 2026**
Yuva Intern (Remote)

- Completed an introductory internship focused on AI applications in the automotive domain.
- Learned the fundamentals of Machine Learning, data preprocessing, and predictive analytics.
- Worked on basic AI/ML tasks and gained hands-on experience with Python-based tools.
- Participated in remote project activities and technical discussions with mentors.

Certifications

- Oracle Cloud Infrastructure 2025 Certified Data Science Professional
- Oracle Cloud Infrastructure 2025 Certified Generative AI Professional
- Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate
- Oracle AI Vector Search Certified Professional
- IBM Data Science Professional Certificate – Coursera
- Google AI Essentials – Coursera
- Generative AI: Introduction and Applications – Coursera
- Machine Learning with Python – Coursera
- Deep Learning Specialization – Coursera (Andrew Ng)
- IoT – NPTEL
- Linux Fundamentals – Coursera
- Data Visualization with Tableau – Coursera
- Generative AI Leader Professional Certificate – Google Cloud

Achievements

- Ranked first in B.E. Computer Science and Engineering for the academic year 2025–2026.
- Developed and published VeraScan, an open-source Python library for train–eval contamination detection, available on PyPI (`pip install verascan`).
- Solved 300+ problems on LeetCode covering DSA patterns used in technical interviews.

Personal Information

Date of Birth: 01-07-2006
Father's Name: P N Govinda Samy
Address: C 158, Santhoshi Matha Temple Street, Coimbatore, Tamil Nadu, India

Declaration

I hereby declare that the information provided above is true and accurate to the best of my knowledge and belief.

Place: **Date:** October 22, 2026

Signature: