

KALIDASAN B

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PROFESSIONAL SUMMARY

Computer systems enthusiast with a strong interest in understanding how software is designed to communicate, scale, and endure. Drawn to the intersection of Artificial Intelligence and modern software systems, I value the architectural decisions that shape dependable backend applications, from networking and Linux to software architecture, where reliability, security, and scalability are built in from the ground up.

EDUCATIONAL QUALIFICATION

B.Tech in Computer Science and Engineering (AI)

2024 – Present

Amrita Vishwa Vidyapeetham, Amritapuri, India

Relevant Coursework: Design and Analysis of Algorithms, Artificial Intelligence, Computational Theory

Higher Secondary Education (Class XII)

2021 – 2022

Army Public School, Bikaner, Rajasthan

PROJECTS UNDERTAKEN

AEGIS – Physics-Guided Radiation Belt Forecasting for Geostationary Satellites

2026 – Ongoing

- Satellites face critical electron flux surges during storms, causing standard ML models to fail at horizons where physics dominate.
- Fine-tuned TimesFM 2.5 on 11 years of GOES data using a PyTorch physics-guided module for multi-horizon probabilistic forecasting.
- Validated framework on satellite payload data, outperforming persistence baselines on free-tier GPU compute.

Artificial Vocal Cord (AVC) AI System Design

2025 – Ongoing

- Speech-impaired individuals lack efficient, real-time assistive devices to translate non-verbal biosignals into spoken words.
- Engineered an AI pipeline comparing GRU, Transformer, and CTC architectures to map multimodal bio-signals to phonemes.
- Linked outputs with neural TTS systems, achieving 94.2% phoneme accuracy for natural voice reconstruction.

AI-Integrated Ocean Hazard Monitoring

2025 – Finished

- Marine navigation systems lack reliable early-warning capabilities for coastal hazards, raising maritime safety risks.
- Built an end-to-end framework using supervised machine learning algorithms to isolate real-time risks from ocean data.
- Deployed a functional detection system that alerts maritime authorities ahead of critical environmental incidents.

SKILLS & SOFTWARE PROFICIENCIES

AI & Data:	Machine Learning, Deep Learning, Generative AI, Large Language Models (LLMs), Time Series Forecasting, Computer Vision, Natural Language Processing, Physics-Informed AI
Programming:	Python, Java, C/C++, Kotlin
Engineering & Tools:	Git, GitHub, Linux, TensorFlow, PyTorch, Hugging Face

CERTIFICATIONS

Quantum Computing & Qiskit Fundamentals – IBM Quantum	2025
Supervised Machine Learning: Regression and Classification – DeepLearning.AI (Coursera)	2025
Cisco Certified Support Technician (CCST) Networking – Cisco Networking Academy	2026

AREAS OF INTEREST

Neuromorphic Computing & AI Architectures | Quantum Computing & Quantum Algorithms | Theoretical Physics & Complex Systems | Astronomy & Space Systems

HOBBIES

Endurance Running & Marathons | High-Altitude Trekking & Exploration | Science Fiction & Technical Literature | Comics

LANGUAGE PROFICIENCY

English: Read, Write, Speak

Hindi: Read, Write, Speak

Malayalam: Speak