Nandeesh Bhatrai

Indian Institute of Technology, Goa

Fourth Year **Undergraduate**, **Computer Science**
E-mail: **official.nandeeshbhatrai@gmail.com**
Mobile: **+91 9101749095**
LinkedIn: **www.linkedin.com/in/nandeeshbhatrai**
Portfolio: **https://nandeesh-bhatrai-portfolio.vercel.app/**
Github: **www.github.com/nandeeshbhatrai**

Education

BTech, Computer Science and Engineering, Indian Institute of Technology Goa	CGPA : **7.6/10**	2022 – Present
Class 12, CBSE, kendriya vidyalaya AFS, Borjhar	Aggregate: **89.8** %	2021 – 2022

Experience

Software Engineering Intern at Google [Certificate] May 2025 – July 2025

Team: Google Cloud Backup and Disaster Recovery
Tech Stack: Golang, Google internal frameworks and infrastructure

- Designed and implemented an **automated cleanup mechanism** for **stale Backup Plan Associations in Google Cloud**, targeting entries left after VM instance deletions.
- Built a **scalable solution** to identify and safely **delete inactive backup associations** after a retention period of 30 days, improving data hygiene and reducing unnecessary storage costs.
- **Integrated the deletion workflow into existing internal systems** with a strong emphasis on reliability, auditability, and rollback safety.
- Resulted in **significant storage optimization** across Google Cloud, enhancing **resource efficiency, scalability and system performance**.

Software Development Engineer (SDE) Intern at Bluestock Fintech[Certificate] June 2024 – Aug 2024

Tech Stack: HTML, CSS, JavaScript, Django

- Developed a full-stack web application using Python and Django for simulated stock trading, enabling 500+ users to execute trades with real-time market and track portfolio performance.
- Improved system efficiency and reduced burden on the servers by 12.2% through rigorous unit testing and debugging.

Projects

News Sentiment Analysis for Economic Predictions [Paper]

- Built a large-scale NLP pipeline on **400K+ Indian financial news articles (2014–2024)**, including scraping, cleaning, lemmatization, and inflation-focused filtering.
- Designed and compared **lexical, IR, and semantic methods** (TF–IDF, BM25/BM25+, negation-aware scoring, VADER, financial lexicons, sentence embeddings) to construct monthly inflation sentiment indices.
- Developed **LLM-based sentiment and relevance pipelines**, including RoBERTa classifiers and a **cross-encoder ranking model**, combining cosine-based semantic filtering with weighted aggregation.
- Achieved the **best alignment with CPI (RMSE ≈ 0.89)** using a cosine-filtered cross-encoder LLM, significantly outperforming traditional NLP baselines and capturing inflation turning points.

Brain MRI Tumor Classification with Explainable AI [Github]

Tech Stack: Python, PyTorch, Albumentations, timm, Grad-CAM

- Built a deep learning pipeline using **ResNet50 (fine-tuned on 3k+ MRI scans)** to classify brain tumors with **93%+ accuracy**.
- Integrated **Grad-CAM** to generate heatmaps, providing explainability by highlighting tumor regions in MRI scans.

Quantitaive Trading (Multi-Strategy) [Github]

- Built a Python-based quantitative trading system with multiple strategies: **Moving Average Crossover, Mean Reversion, Momentum, RSI, and Breakout**.
- Developed a **vectorized backtester** with position sizing, equity calculation, and plotting utilities for performance analysis.
- Created a **synthetic OHLCV data generator** for testing and demonstration purposes.

Reinforcement Learning Snake Bot [Github]

- **Tech Stack:** Python, PyTorch, OpenCV, MSS, PyAutoGUI, NumPy.
- Implemented a **Deep Q-Network (DQN)** agent to autonomously play the Google Snake Game using screen capture and keyboard simulation.
- Integrated **replay memory** and **CNN-based Q-value approximation** for stable RL training.

Skills

Programming Skills:	Golang, Python, C++, JavaScript, React JS, HTML, CSS, VHDL, Bash and shell-scripting
Development Skills:	Machine Learning(ML), Deep Learning(DL), Natural Language Processing(NLP), Competitive Programming(CP), Data Structures and Algorithms(DSA), Object Oriented Programming(OOPs), Web Sockets, Web Scraping, Git, GitHub, Linux
Framework/Libraries/Tools:	NumPy, Pandas, Matplotlib, Scikit-learn, TensorFlow, PyTorch, OpenCV, Burp-Suite, Postman.
Relevant Coursework	Data Structures and Algorithms, Algorithm Design and Analysis, Operating Systems, Artificial Intelligence, Probability and Statistics, Computer Networks

Achievements

- ICPC Amritapuri and ICPC Chennai Regionalist 2025
- 5th out of more than 150 teams in ML Codefest, organized by IIT Jodhpur
- **Codeforces**: Expert, Max. 1685
- **Leetcode**: Knight, Max. 2019, solved 500+ questions
- **CodeChef**: 3 star, Max. 1781
- JEE Adv. AIR 3839