NAVANEETHA KRISHNAN

SENIOR DATA SCIENTIST

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LOCATION | Chennai, INDIA

EXPERIENCE | 7 Years 2 Months

Key Skills

- Generative Ai
- Aws
- Llm
- Nlp
- Text Analytics
- Cnn
- Neural Networks
- Predictive Modeling
- Computer Vision
- Deep Learning
- Statistical Analysis
- Ms Office
- Python
- Tableau
- Machine Learning
- Spacy
- Flask
- GCP
- JIRA
- Gitlab

Certification

Profile Summary

NLP: Developing advanced NLP models for text analysis, sentiment analysis, and language generation. Deep Learning: Leveraging deep neural networks for image recognition, object detection, and recommendation systems. Computer Vision: Creating computer vision solutions for applications such as image classification, object tracking, and facial recognition. Large Language Models: Harnessing the capabilities of large language models to solve complex language understanding and generation tasks. Generative AI: Building generative models for content creation, art generation, and data synthesis.

Work Experience

Senior Data Scientist

Renault Nissan Technology and Business Centre India (RNTBCI)

05/2024 - Present

Gen AI Solution Developer & AI Task Architect | Time Series Expert | AI-Driven Innovation for Business Efficiency
As a Gen AI Solution Developer and AI Task Architect, I specialize in harnessing the power of advanced AI technologies to simplify processes and optimize business operations. My focus is on leveraging generative AI to develop innovative solutions that streamline workflows, enhance decision-making, and create actionable insights. With deep expertise in time series analysis, I work on forecasting, anomaly detection, and trend analysis, empowering businesses to make data-driven decisions in real time. My goal is to drive AI-driven efficiencies that reduce manual effort, accelerate productivity, and enable future-proof solutions.

- ATP At TVS Training And Services
- Zero To Gans Deep Learning
- Intro To Machine Learning

Languages

- Tamil
- English
- Hindi

Hobbies

- Yoga
- Running
- Swimming

I thrive in dynamic environments where innovation meets real-world impact, and I'm always exploring new ways to apply AI to improve both systems and outcomes.

Lead Engineer Artificial Intelligence and Machine Learning

HCLTech

05/2021 - 05/2024

Innovative and results-driven Lead AI/ML Engineer developing scalable and cutting-edge AI and Machine Learning solutions across a wide range of industries. Specializing in Natural Language Processing (NLP), Deep Learning, Computer Vision, Large Language Models (LLM), and Generative AI, I have led the development and deployment of high-impact models and systems that address complex business challenges.
With a strong track record of driving business outcomes through advanced AI technologies, I excel in creating solutions that are not only technically advanced but also aligned with business objectives. My expertise spans the entire AI lifecycle, from data collection and algorithm design to model optimization and large-scale deployment. Known for a collaborative leadership style, I have successfully managed cross-functional teams, mentored junior engineers, and built AI systems that generate measurable value.
Core Skills & Expertise:
NLP: Expertise in language modeling, sentiment analysis, text summarization, and chatbot integration.
Deep Learning: Skilled in designing and optimizing neural networks for image and video recognition, sequence modeling, and time series forecasting.
Computer Vision: Developed object detection, image segmentation, and facial recognition systems for diverse applications.
Generative AI: Proven experience with GPT-style models, GANs, and other generative techniques for content generation and creative applications.
Large Language Models: Architected and fine-tuned LLMs for complex language understanding tasks including document processing, question answering, and summarization.
AI Scalability & Optimization: Expertise in building AI solutions that scale in production environments, focusing on cloud deployment and integration with existing systems.

Senior Engineer

Mobis India Limited (Hyundai Mobis)

01/2017 - 08/2019

Led incoming inspection processes to ensure product quality by identifying supplier defects and initiating Problem Investigation Reports (PIRs), driving corrective actions within defined timelines.
Monitored and evaluated supplier quality performance on a monthly basis, providing detailed reports to suppliers and facilitating necessary corrective actions based on the performance scores.
Conducted regular audits at supplier facilities to assess and improve processes, ensuring adherence to quality standards, and collaborated during trial events to ensure smooth implementation.
Managed and tracked the Cost of Poor Quality (COPQ), actively working towards cost reduction through Kaizen initiatives.
Contributed as an active cross-functional team (CFT) member in the development and review of Process Flow Diagrams (PFDs), Process Failure Mode and Effect Analysis (PFMEAs), and Control Plans for new and ongoing model projects.
Organized and led weekly quality meetings to review quality performance metrics, addressing deviations and implementing corrective actions to improve supplier outputs.
Collaborated closely with the product development team to evaluate and enhance designs, aiming to optimize product quality and manufacturability.
Managed stock levels to align with production plans and ensured the clearance of rejected parts using SAP modules, maintaining smooth production flow.

Graduate Engineer Trainee

Tag Corporation

05/2016 - 12/2016

Prepared comprehensive technical and commercial offers, detailing pricing, trading conditions, and product specifications.
Analyzed and evaluated specific technical issues and associated risks to ensure optimal solutions and proposal accuracy.
Managed the initial technical inspections, gathering critical information to support the development of accurate and competitive proposals.
Identified the most suitable technology and product types based on application characteristics, ensuring alignment with customer needs.

Provided technical support to Sales Managers during customer meetings, offering expertise to clarify technical aspects and drive customer confidence.
Contributed to the identification and development of new market opportunities within the designated territory, supporting Sales Managers in driving growth.
Compiled detailed techno-commercial proposals and presented them to management for approval, ensuring alignment with business goals and customer requirements.
Facilitated kick-off meetings, ensuring commitments and timelines were clearly communicated and met across teams.
Planned and executed domestic and international sales promotion activities to enhance brand presence and attract potential customers.
Conducted market research, business development, and competitor analysis to identify trends, potential leads, and areas for improvement.
Created and delivered effective audio-visual presentations using basic tools, enhancing communication and proposal presentations.
Products Handled: Transmission line hardware fittings for Single, Twin, Triple & Quadruple Suspension/Tension Bundles, HTLS and ACCC fittings, Conductor accessories, and Earth wire accessories for power transmission systems.

Education

PG Diploma - Computers

2020

Great Lakes Institute of Management

Grade - Pass

B.Tech/B.E. - Electrical

2016

Anna University

Grade - 6.98/10

Projects

AI-Driven File Verification, Summarization, and Content Analysis Tool

6 Months

Developed an automated tool integrating AI, computer vision, and NLP to streamline file

verification, content summarization, and analysis, enhancing file management workflows.
Key Features:
Folder & File Verification: Automatically checks folder structure and alerts for missing or misnamed folders.
File Integrity Checks: Verifies file metadata and ensures data integrity with file hashing.
AI-Based Summarization: Extracts key content from documents (text, CSV) for concise summaries.
Computer Vision & OCR: Detects misalignments and missing content in image-based files, extracting text via OCR.
NLP for Content Analysis: Analyzes text, extracts keywords, and validates content against templates.
Impact:
Increased efficiency by automating manual tasks.
Improved accuracy by reducing human error.
Scalable solution easily integrated into existing workflows.

ECU Chatbot with LLM & Database Integration

4 Months

Developed an advanced ECU chatbot utilizing Large Language Models (LLM) and a database to provide real-time control and diagnostics for Electronic Control Units (ECUs) and connected systems.
Key Features:
LLM-Powered Interaction: Interprets user commands in natural language, simplifying ECU system management.
Real-Time ECU Control & Monitoring: Interfaces with ECUs for real-time feedback and remote control.
Database Integration: Stores system data, logs, and preferences, enabling optimized user interactions.
Automated Diagnostics: Uses machine learning to diagnose ECU issues and guide users through troubleshooting.
Context-Aware Responses: Provides relevant, accurate responses based on contextual data.
Impact:
Enhanced user experience with conversational interfaces for complex ECU systems.
Increased efficiency by automating monitoring, diagnostics, and control.
Scalable solution adaptable to different ECUs and hardware applications.

Researcher & Developer | GENAI Tools & LLM Integration

12 Months

Researched and developed a state-of-the-art NLP tool using Llama-2, integrated with Flask, Python, NLP, and AWS. Focused on custom training of the model to improve accuracy and performance for specific use cases.

Technologies:

Python
LLM
Flask
NLP
AWS
Achievements:

Successfully deployed a Llama-2-powered NLP tool, significantly enhancing text processing accuracy.
Custom training of the model resulted in improved adaptability and performance for diverse text processing tasks.
Received positive feedback from users on the tool's functionality, precision, and ease of use.
Impact:

Advanced the application of NLP technology with an accessible, efficient tool designed for real-world use.
Demonstrated expertise in integrating cutting-edge technologies into practical, user-centered solutions.

A Novel Method for Graph Validation using AI and Computer Vision Techniques

12 Months

Introduction:
Validating graphs against external data is time-consuming and error-prone. This paper proposes an AI-driven solution to automate graph validation, improving efficiency and accuracy.
Solution Overview:
We automate graph validation, assessing colors, shades, boundaries, and text using Python, Deep Learning, OCR, Pytorch, numpy, and pandas for precise results.
Technical Architecture:
Python: Flexible and supports extensive libraries.
Deep Learning: Ensures accurate analysis of graph components.
OCR: Extracts textual data for validation.
numpy/pandas: Enhance data analysis.
Workflow:

Parse graph data.
Analyze components via Deep Learning.
Extract text using OCR.
Cross-reference with external sources.
Validate using AI.
Generate reports.
Future Enhancements:
Advanced models for better accuracy.
Real-time validation for dynamic data.
Integration with BI tools for enhanced visualization.
Conclusion:
Our solution automates graph validation, enhancing efficiency and accuracy.

Vision Comparison Algorithm

6 Months

Implemented a vision comparison algorithm using Python, OCR, Deep Learning (PyTorch), and custom computer vision techniques to compare web pages and images. The solution identifies and highlights meaningful differences, efficiently detecting discrepancies. Developed a custom algorithm that combines OCR for text extraction and Deep Learning for visual analysis, ensuring accurate comparison across varied content.
The tool analyzes both textual and visual elements, detecting differences in layout, text, and images. Results are presented in a user-friendly format, making it easy to spot discrepancies.
This project demonstrates proficiency in computer vision, machine learning, OCR, and software development, highlighting the ability to create solutions that address complex challenges in automated image and text comparison.

A Novel AI Based Approach to Identify, Classify and to Match the Detected Products in E-Commerce

6 Months

Introduction:
E-commerce thrives on innovation, but ensuring the accuracy of promotional emails can be challenging. Manual verification is error-prone and time-consuming. We propose an automated solution using Python, Deep Learning, Computer Vision, PyTorch, OCR, and AI to streamline the process.

Solution Overview:
Our solution automates end-to-end testing by parsing promotional emails, processing product

images, extracting text, and comparing data with product listings. AI algorithms detect discrepancies, ensuring accuracy.

Technical Architecture:

Python for versatility.
Deep Learning (PyTorch) for insight extraction.
Computer Vision for product identification.
OCR for text extraction from images.
Workflow:

Parse email data.
Analyze product images.
Extract text with OCR.
Compare data with listings.
AI-based verification.
Confirmation by the testing team.
Future Enhancements:

NLP for better content analysis.
Predictive analytics and real-time monitoring.

Falcon Framework

6 Months

I led a project on Named Entity Recognition (NER) to extract entities from unstructured text, enhancing information retrieval and analysis.
Technologies Used:
Python for development.
Spacy and TensorFlow for NLP and deep learning.
LLMs for improved entity recognition.
Deepsegment for sentence segmentation.
Pandas and NumPy for data manipulation.
Rule-Based Learning for pattern discovery.
Highlights:
Developed accurate NER models for identifying names, organizations, locations, etc.
Used TensorFlow for scalable deep learning models, processing large datasets.
Customized models with Spacy for domain-specific needs.
Integrated NER into workflows for real-time extraction.
Continuously refined models to adapt to evolving language.
Impact & Future: The project advanced NLP in sectors like finance, healthcare, and law. Future plans include multilingual support, domain-specific improvements, and knowledge graph integration.

Predicting the Future of India's Seafood Exports: A Data-Driven Insight

2 Weeks

India’s seafood industry is set for growth, with exports projected to reach 1,909,675 metric tons by 2025. My 2024 prediction was 94% accurate, and several factors are driving this upward trend.
Key Growth Drivers:
Rising Global Demand: Health-conscious, sustainability-focused consumers are increasing demand for seafood in markets like the Middle East, Southeast Asia, and Europe, positioning India to meet this need.
Technological Advancements: Innovations in aquaculture and fishing technologies are boosting production and quality, making Indian seafood more competitive globally.
Government Support: Policies to improve infrastructure and incentivize exports and sustainable practices are fostering sector growth.
Sustainability Focus: India’s commitment to eco-friendly practices ensures long-term industry growth and global competitiveness.
India’s seafood industry is poised to lead the global market, driving economic growth and promoting sustainability.