Nilesh Mishra

Calicut, Kerala
+91 9931734422
thenileshmishra@gmail.com
linkedin.com/in/thenileshmishra

Professional Summary

Machine Learning Engineer with experience developing innovative ML models, specializing in NLP and deep learning techniques. Skilled in Python, TensorFlow, and scikit-learn. Proven ability to analyze large datasets and optimize performance.

Education

- **National Institute of Technology, Calicut** — Kerala, India
  Masters of Technology in Computer Science Engineering (CGPA: 8.0) — *August 2024 - May 2026*
- **Amity University, Kolkata** — West Bengal, India
  Bachelor of Technology in Computer Science Engineering (GPA: 6.7) — *August 2017 - May 2021*

Experience

- **Web Prism IT Solutions | (certificate)** — Kolkata, India
  Machine Learning Intern — *May 2020 - June 2020*
  - Developed a lane detection system for autonomous vehicles, achieving a 95% accuracy rate using **Python** and **OpenCV**.
  - Implemented **Canny edge detection** to enhance feature recognition, improving processing efficiency by 30%.
- **UBK Infotech Pvt Ltd** — Kolkata, India
  Front End Developer ***(React Js)*** — *Aug 2022 - Jan 2024*
  - Designed a user-friendly ERP platform for educational institutions using **React.js**, reducing manual data entry tasks by 40% and enabling real-time reporting.
  - Developed sleek and interactive user interfaces with **Material UI**, enhancing accessibility for stakeholders like administrators, teachers, and parents.
  - Integrated **RESTful APIs** to ensure real-time synchronization, improving data flow efficiency across the platform.
  - Led the development of the **Attendance Management System**, translating Figma designs into responsive React components, achieving 90% design consistency.
- **Sunrise Mentors Private Limited (Coding Ninjas)** — Gurugram, India
  React Js Mentor — *Aug 2023 - Nov 2023*
  - Mentored over 50 students on **React.js**, simplifying complex concepts to improve comprehension and coding proficiency.
  - Collaborated with instructors to develop course materials, including projects and assignments, enhancing learning outcomes.
  - Provided one-on-one doubt resolution, achieving a 90% student satisfaction rate and significant improvements in project quality.

Projects

- **Court Case Summarizer** | *NLP, BART-base* |
  - Engineered a legal text summarization system using the **BART-base** model, reducing document length by 80% while retaining critical information.
  - Preprocessed and structured over 10,000 legal documents, optimizing input for model training and improving accuracy by 15%.
  - Fine-tuned the **BART-base** model with domain-specific embeddings to handle complex legal terminology effectively.
  - Evaluated summarization quality with **ROUGE** and **BLEU** metrics, achieving scores of 0.85 and 0.78, respectively.
  - Implemented the system in a scalable pipeline, making it suitable for integration into enterprise-grade legal applications.

- **LLM-Enhanced Contextual Sequential Recommender (LLMSeqRec)** | *LLMs, Sequential Recommendation, Transformers* | **(Ongoing)**
  - Prepared MovieLens dataset and performed exploratory data analysis (EDA), preprocessing, and feature engineering for sequential recommendation tasks.
  - Implemented baseline SASRec sequential recommender model in PyTorch to establish initial performance benchmarks.
  - Currently developing an enhanced model by integrating pretrained Large Language Models (LLMs) for generating contextual embeddings to improve recommendation accuracy.
  - Designed project folder structure, pipeline workflow, and established systematic evaluation protocols including accuracy, NDCG, and cold-start metrics.
- **Transforming Brainwaves into Images** | *EEG, Deep Learning, Latent Diffusion Models* |
  - Developed a multimodal EEG-based image generation system by integrating brainwave (EEG) data with visual modality using Latent Diffusion Models (LDM), achieving a 10% reduction in reconstruction error.
  - Processed and structured **10,000+ EEG samples** for model training, enhancing brain-to-image decoding accuracy by **25%**.
  - Implemented a novel EEG-visual **multimodal** feature extraction pipeline, significantly improving latent space alignment between EEG embeddings and visual representations.
  - Achieved **top-5 image classification accuracy of 80%** by integrating EEG signal embeddings with contrastive learning techniques.
  - Designed a scalable architecture compatible with real-time EEG decoding applications, enabling fast and efficient brainwave-based image synthesis.
  - Designed a scalable architecture enabling real-time multimodal EEG-image decoding, demonstrating potential for efficient deployment in practical BCI (Brain-Computer Interface) applications.

Technical Skills

- **Programming Languages**: Python (expert), C++, C , JavaScript
- **Technologies/Frameworks/Libraries**: PyTorch, Hugging Face Transformers, Pandas, NumPy, ReactJS, HTML, CSS, Bootstrap, Material-UI, Ant Design, OpenCV
- **Machine Learning and AI**: Large Language Models (LLMs), Deep Neural Networks, Natural Language Processing (NLP), Transformers, Attention Mechanisms, Sequential Models (SASRec), TensorFlow, PyTorch, Scikit-Learn, OpenCV, Scikit-Image, BART
- **Operating Systems**: Git, Git Windows, Linux (Ubuntu), Mac