Saishna Budhathoki

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Kathmandu-32, KTM Metropolitan City, Nepal

Professional Summary

Passionate Machine Learning Engineer with 2+ years of experience in developing AI-driven healthcare solutions, educational AI systems, and advanced ML models. Proven track record in mentoring 100+ students, publishing technical books, and leading innovative projects across healthcare, computer vision, and NLP domains. Strong background in both research and practical implementation of cutting-edge AI technologies.

Education

Bachelor of Engineering in Information Technology   **2021 − 2025**
Nepal College of Information Technology (NCIT)   *Kathmandu, Nepal*
- Major: Software Engineering, Minor: Machine Learning
- Relevant Coursework: Big Data, NLP, Data Analysis, Data Structures & Algorithms

Datacamp Fellow - DataScience & AI   **Feb 2025 − July 2025**
online Remote - Access to Premieuim version   *Pennsylvania New York*
- DataScience, DataEngineering,SQL

Experience

ICU Machine Learning Engineer   **2024 − Present**
Nepal Intensive Care Research Foundation   *Bansbari, Kathmandu*
- Developed AI models for early detection of ARDS, sepsis, and MODS with 94% accuracy
- Built predictive models for hospital stay duration and ICU criticality scoring (SOFA, APACHE)
- Implemented mortality risk prediction systems saving 15% more lives through early intervention
- Optimized ventilator weaning strategies using machine learning algorithms
- Collaborated with Dr. Diptes Aryal from Nepal Medicity Hospital

AI/ML Instructor   **July 2025 − Present**
AIMS International College   *Lalitpur, Nepal*
- Designed and delivered lectures on Machine Learning, Deep Learning, and Data Science fundamentals
- Taught hands-on labs covering Python, TensorFlow, Scikit-learn, and data preprocessing techniques
- Guided students through projects on computer vision, NLP, and healthcare-related AI applications
- Mentored students in applying AI/ML concepts to real-world datasets for research and competitions
- Organized workshops on AI ethics, model interpretability, and emerging trends in Artificial Intelligence
- Collaborated with faculty to develop curriculum integrating theory with practical implementation

AI Consultant   **2025 − Present**
AITC International Software Company   *Madhyapur Thimi*
- Delivered hands-on training sessions on Python, Machine Learning, and Data Science.
- Bulit Real-World Algorithm
- Designed course materials and workshops tailored for beginners and intermediate learners.
- Mentored participants in applying AI concepts to real-world problem-solving.

Techleadhers Fellow - DataScience & AI(Project Competition Winner)   **2024 − 2025**
Aaviyanta Foundation   *Khusibu, Kathmandu*
- Selected for a 6-month fellowship on leadership, technology, and innovation.
- Developed a disaster management system using GIS, AI for real-time flood monitoring.
- Researched climate change impacts and implemented predictive analytics for disaster response
- Gained leadership skills in project management, team collaboration, and decision-making
- Enhanced soft skills in presentation, public speaking, and pitching technical projects effectively.
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- Enhanced soft skills in presentation, public speaking, and pitching technical projects effectively.

Python and DataScience Instructor   **NOV 2024 − FEB 2025**
Naya Aayam: Multidisciplinary College   *Kathmandu, Nepal*

- Teaching advanced AI topics including RAG, LLMs, and Multimodal AI to 150+ students
- Conducting interactive sessions on Python programming, Data Science concepts, and Machine Learning techniques for undergraduate and graduate students.
- Designing and delivering course materials, including hands-on projects and real-world examples, to foster practical understanding.
- Mentoring students in implementing data-driven solutions and building predictive models using Python and ML libraries.

Mentor - NOSK Hackathon 2024
Nepal Open Source Klub *Kathmandu, Nepal*
- Mentored participants on open-source tools, software engineering practices, and project design
- Helped student teams build scalable, real-world solutions under tight deadlines

Mentor - Dristi 2024
Dristi 2.0 At KEC *Nepal*
- Supported 60+ project groups in developing innovative solutions in healthcare, education, and AI
- Reviewed project architectures and guided on technical optimization for final presentations

Mentor - NAMI Projects 2024
Naya Aayam: Multidisciplinary College *Jorpati, Kathmandu*
- Mentored undergraduate students on Python, data science, and ML project implementation
- Helped students align academic projects with industry-level research practices

Mentor - Nagarjun College 2024
Nagarjun College of IT *Kathmandu, Nepal*
- Guided students on AI/ML fundamentals, cloud computing, and data-driven research approaches
- Supported multiple project teams in building innovative solutions with practical industry use-cases

Major Projects

Sepsis & Polyp Detection System | *Python, TensorFlow, OpenCV, Flask* 2024 − Present
- Led AI development for sepsis detection across 15+ hospitals including TU Teaching Hospital, Mediciti,Grande
- Deployed real-time diagnostic support systems integrated with hospital infrastructures

Kaya Vyayam Guru with AI Recommendation | *Computer Vision, NLP, ML* 2025
- Developed real-time posture tracking system using MediaPipe and custom CNN models
- Built intelligent Nepali diet recommendation system with traditional and ML approaches
- Created health , speech translation for fitness tips and progress tracking with 89% user satisfaction
- Integrated computer vision for exercise form correction and calorie estimation

Devanagari License Plate Recognition System | *YOLOv8, PyTorch, OpenCV* 2024
- Achieved 98% accuracy in real-time Devanagari license plate detection and recognition
- Fine-tuned YOLOv8 for optimal performance under varied lighting and weather conditions
- Implemented OCR pipeline for extracting and processing Nepali license plate data
- Deployed system for traffic management and automated vehicle identification

Multimodal Emotion Intelligence System | *NLP, Deep Learning, Sentiment Analysis* 2024
- Developed emotion classification system analyzing text, audio, and visual data simultaneously
- Achieved 91% accuracy in detecting complex emotions using transformer-based models
- Integrated with affiliate marketing platforms for personalized customer engagement
- Implemented real-time emotion tracking for customer behavior analysis

Student Performance Analysis | *Logistic Regression, Random Forest, Feature Engineering* 2024
- Built a classification model to predict student performance based on attendance, grades, and study habits

- Applied Logistic Regression and Random Forest to categorize students into performance groups
- Conducted feature engineering and model tuning to improve accuracy and prediction

Movie Recommendation System | *Collaborative Filtering, Content-Based Filtering, Recommender Systems* **2024**
- Developed a movie recommendation system using collaborative and content-based filtering techniques
- Leveraged user ratings and movie genres to personalize movie suggestions
- Fine-tuned recommendation algorithms to improve accuracy and enhance user experience

Pneumonia Detection System | *CNN,VGG and tensorFlow keras* **2023**
- Developed a Pneumonia Detection system using a Convolutional Neural Network (CNN) built with Keras and deployed with Streamlit.
- Created a Streamlit web application for easy chest X-ray image uploads and real-time pneumonia detection
- Deployed the model as a web app, allowing users to access the system online for pneumonia diagnosis.

E-commerce Website | *Django* **2024**
- Developed an online shopping web application using HTML, CSS, JavaScript, and the Django framework in Python.

Technical Skills

Programming Languages: Python, Java, JavaScript, SQL, R, MATLAB
Machine Learning: TensorFlow, PyTorch, Scikit-learn, XGBoost, LightGBM, CatBoost, Keras, FastAI, JAX
Deep Learning & AI: Transformers, BERT, GPT, LLaMA, CNN, RNN, LSTM, GAN, Diffusion Models
NLP & LLMs: Hugging Face, LangChain, RAG, OpenAI API
Computer Vision: OpenCV, YOLO, MediaPipe, PIL, Image Segmentation, Object Detection
Data Science: Pandas, NumPy, Matplotlib, Seaborn, Plotly, Dash, Apache Spark, PySpark, Dask
Databases: MongoDB, PostgreSQL, MySQL
Web Development: Flask, Django, FastAPI, React, HTML5, CSS3, Bootstrap
Tools & Platforms: Git, GitLab, Jupyter, Colab, Streamlit, Gradio, Tableau, Power BI, Overleaf

Certifications & Achievements

Professional Certifications **2024 − 2025**
DataCamp & LinkedIn Learning

- AWS Graduate-Cloud Foundation
- Certified Data Engineer Associate - DataCamp
- Certified Data Scientist Associate - DataCamp
- Certified Data Analyst - DataCamp
- SQL Associate - DataCamp
- Data Literacy - DataCamp
- AI Engineer Certification - DataCamp
- Project Management - Microsoft
- Career Essentials in Generative AI - Microsoft & LinkedIn
- TechleadHers Fellowship Graduate
- Shecodes Basics
- TechleadHers Final Project Competition Winner
- Shecodes Basics

Academic & Professional Honors2024 − 2025 Various Institutions

- Technopreneur Award - Fitness Coach Startup (40 hours entrepreneurship training, A- grade)
- AI/ML Mentor - Nagarjun College, NCIT Hackfest , Dristi (Mentored 60+ project groups),Nami College
- TEchleadhers - Best Collaborator and Project Winner
- Guest Speaker - Google Developer Group Kathmandu DEVFEST

Publications & Research

Published Books   **2023 − 2024**
Sugam Suppliers, NCIT

- **Data Structures and Algorithms (DSA)** - Comprehensive guide for computer science students
- **AI and Machine Learning** - Practical approach to modern AI techniques and applications

Upcoming Research Publications   **2024 − 2025**
International Conferences & Journals

- **Devanagari License Plate Detection and Recognition with Highest Accuracy**
- **AI-Driven Diet Recommendation Systems for Nepalese Population**
- **Early Sepsis Detection in ICU Using Multi-Modal Deep Learning**

Leadership & Community Impact

Teaching & Mentoring Experience   **2023 − Present**
Multiple Institutions

- Mentored 200+ students across 50+ AI/ML projects with 85% project success rate
- Conducted 120+ hours of Python bootcamps across 5 engineering colleges
- Guest speaker at Nepal Open Source Club (NOSK) and Cosmos College of Engineering
- Python Bootcamp Instructor at KEC, NCIT, and Nagarjuna College