Sahil Duwal

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Enthusiastic Computer Engineer with strong experience in AI, Machine Learning, and Web Development. Adept at building intelligent models, computer vision solutions, and data-driven systems. Constantly exploring new technologies to deliver impactful and efficient digital innovations.

Experience

Tech Support Member – Hult Prize On-Campus Program

Khwopa College of Engineering | 2024 – 2025

- Provided comprehensive technical support for event management, presentation setups, and logistics.
- Assisted participating teams in resolving IT-related issues during workshops, mentoring sessions, and competitions.
- Ensured seamless technical operations across multiple in-campus Hult Prize events, contributing to the overall success of the program.

DataCamp Fellowship

Code for Nepal | 2025 – Present

- Participated in comprehensive data science training programs.
- Enhancing skills in Python, Data Analysis, and Machine Learning applications.

Skills

- **Programming Languages**
    - Python · C · C++ · HTML · CSS
- **Artificial Intelligence & Machine Learning**
    - PyTorch · scikit-learn · Machine Learning · Deep Learning · Computer Vision · Natural Language Processing (NLP)
- **Data Science & Analytics**
    - NumPy · Pandas · Matplotlib · Data Analysis · Statistical Modeling
- **Web Development & Tools**
    - FastAPI · MySQL · Git · Latex

Education

Bachelor of Computer Engineering

Khwopa College of Engineering, IOE – Libali, Bhaktapur | 2021 – Present

- Pursuing a comprehensive program emphasizing Artificial Intelligence, Machine Learning, and Software Development.

- Engaged in practical projects and research focused on intelligent systems and real-world problem solving.

Higher Secondary Education (+2), Science (Mathematics)

Khwopa Secondary School – Dekocha, Bhaktapur | 2019 – 2021

GPA: 3.01

Primary & Secondary Education

Nyatapola Secondary School – Kamalbinayak, Bhaktapur | 2007 – 2019

GPA: 3.60

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Certifications & Courses

- **Learn HTML** – Programiz Pro | 2024
- **SQL Basics** – Programiz Pro | 2024
- **Learn Python Basics** – Programiz Pro | 2024
- **Python Essentials I** – Cisco Networking Academy | 2024
- **Introduction to Cybersecurity** – Cisco Networking Academy | 2024
- **Introduction to IoT** – Cisco Networking Academy | 2024
- **AI Fundamentals** – DataCamp | 2025
- **Data Skills for Business** – DataCamp | 2025
- **Understanding Data Topics** – DataCamp | 2025
- **EU AI Act Fundamentals** – DataCamp | 2025

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Achievements

- **Hult Prize Nepal** | 2022 – 2023
  - Reached Semi-Finals with a campus team startup idea, presenting an innovative social impact solution.
- **CodeYatra Hackathon** | 2025
  - Participated in a national-level innovation hackathon, focusing on AI-driven problem-solving.
- **Locus Pattern Verse** | 2025
  - Advanced to Phase-2 in the national tech competition with an AI-powered rug design generation system.

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Projects

Deepfake Detection & Localization | *AI/ML*

- Developed a hybrid ViGNN—U-Net model for detecting and localizing deepfake content with high accuracy and robustness across various manipulation types.
- Tech: PyTorch · Computer Vision · Deep Learning · U-Net · ViGNN

Ghumti: AI Travel Assistant | *AI/ML*

- Built an intelligent chatbot powered by Llama 3 to provide real-time local bus routes, schedules, and optimized travel information.
- Tech: Llama 3 · NLP · Chatbot · API Integration

Cooking Recipe Portal | *Web Development*

- Created a full-stack web app for recipe management with secure authentication, advanced search, and responsive UI.
- Tech: React.js · FastAPI · MySQL

Rug Design Generator – Pattern Verse | *AI/ML*

- Developed a multi-modal AI system using JanusFlow & Stable Diffusion to generate customizable rug designs via Gradio UI.
- Tech: JanusFlow · Stable Diffusion · Gradio

Facial Emotion Detection | *AI/ML*

- Implemented a deep CNN model to classify seven human emotions from static images and real-time webcam feed.
- Tech: PyTorch · Computer Vision · CNN

Real-Time Mask Detection | *AI/ML*

- Fine-tuned ResNet18 with MediaPipe for real-time mask detection and confidence scoring.
- Tech: PyTorch · MediaPipe · ResNet18

Captioning Image | *AI/ML*

- Built an image captioning model combining ResNet50 encoder and LSTM decoder for automatic description generation.
- Tech: PyTorch · ResNet50 · LSTM

TumorNet – Brain Tumor Segmentation | *AI/ML*

- Developed U-Net model for brain tumor segmentation from MRI scans, achieving strong Dice and IoU metrics.
- Tech: PyTorch, U-Net, Albumentations