

Sachin Koirala

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EXPERIENCE

IEEE Competitive Programming, IOE 2023

Learned to visualize the use of DSA in problem solving.

Hult Prize at IOE 2023

Participated in the 2023 Hult Prize Challenge on “Redesigning Fashion to be Sustainable” and reached the semi-finals. Proposed an innovative solution promoting the use of flax as a sustainable alternative to cotton in the fashion industry.

Hult Prize at KhCE 2024

Served as Technical Head on the Organizing Team, leading a team of 6 to manage all technical operations. Responsible for system setup, troubleshooting, and ensuring smooth event execution.

PROJECTS

Image Steganalysis using Ensemble Classifier [Link to repo](#)

Developed a steganalysis system to detect hidden messages in images using an ensemble classifier. Utilized Fisher Linear Discriminant (FLD) as the base learner to improve detection accuracy and robustness.

Multimodal Malware Classification [Link to repo](#)

Developed a multimodal malware detection system combining CNN-based image analysis of binaries and API call sequence patterns. Achieved high accuracy, enhancing robustness against obfuscation techniques.

101 Food Classification [Link to repo](#)

Designed and deployed a food recognition system using Swin Transformers, processing 100K+ food images across 101 categories.

LegalSathi [Link to repo](#)

Developed a chatbot using Llama 3 and LangChain to provide legal document explanations and rights awareness in Nepal.

Class wise Fact Generator [Link to repo](#)

Developed an API-based system using OpenAI and Azure TTS to generate class-specific facts and convert them to audio. Built with FastAPI and Streamlit for seamless integration.

Study Aid System [Link to repo](#)

Developed a dynamic learning tool using OpenAI's API to generate curriculum-aligned explanations, real-world examples, and assessment questions for specific topics.

Other Projects

- [Glaucoma detection in retinal fundus images using nature-inspired algorithm](#)
- [Facial Key Points Detection](#)
- [House Price Prediction](#)
- [2D Data Visualization](#)
- [Vehicle Detection using RCNN](#)
- [Grad-CAM for CNN](#)
- [Multiple Data Analysis Tasks](#)

EDUCATION

Uniglobe Secondary School, Kathmandu, Nepal

April 2020

Higher Secondary School, Science Stream, National Examination Board (NEB)

Khwopa College of Engineering, Bhaktapur, Nepal

2021 - 2025

Bachelor of Computer Engineering, Affiliated with Tribhuvan University

TECHNICAL SKILLS

Languages	Python, C/C++, HTML/CSS, SQL, JavaScript
Frameworks & Libraries	PyTorch, TensorFlow, FastAPI, scikit-learn, Pandas, NumPy
Tools & Platforms	Git, Linux, Docker, Postman, Jupyter Notebook
Databases	MySQL, MongoDB
Other Skills	LaTeX, Canva, REST APIs, OpenCV