SAMRAT KUMAR ADHIKARI

+977-9763262779 | samratmetaladhikari@gmail.com | samratkumaradhikari.com.np

SamratAdhikari | ubermensch | Samrat-Adhikari | marcusdayounger

Lalitpur, Bagmati, Nepal

OBJECTIVE

Dedicated computer engineering student with a genuine passion for data science and machine learning. Skilled in analyzing complex datasets and building models to solve practical problems. Excited to contribute to meaningful projects while learning and growing alongside a forward-thinking team.

PROJECTS

- **SignScribe: ASL Classification** *2023*
  Tools: [TensorFlow, OpenCV, MediaPipe] [ ]
  - Developed a real-time sign language classification model for recognizing American Sign Language (ASL) hand signs
  - Implemented background subtraction techniques using OpenCV to enhance model accuracy, achieving robust classification performance
  - Applied MediaPipe for hand tracking and feature extraction, optimizing the system's ability to accurately interpret hand signs

- **Skin Cancer Detection: A Pipelined Architecture** *2024*
  Tools: [TensorFlow, Huggingface, OpenCV, FastAPI, Streamlit] [ ]
  - Built a 4-stage pipelined system to detect skin lesions, classify them as benign or malignant, and further identify subcategories from dermoscopic images
  - Explored and applied image processing techniques including hair removal and OpenCV contour-based mole extraction to improve preprocessing and model experimentation
  - Trained and evaluated deep learning models using TensorFlow; deployed best-performing models on Hugging Face for scalable accessibility
  - Developed an API using FastAPI and integrated it into an interactive diagnostic web app built with Streamlit, enabling seamless real-time classification and user interaction

- **FeatherFind: Bird Call Classification** *2024*
  Tools: [Librosa, TensorFlow] [ ]
  - Developed a model to classify bird species based on audio recordings, with a focus on real-world application for accurate bird identification
  - Leveraged Librosa for sophisticated audio processing and feature extraction to enhance classification accuracy
  - Implemented data augmentation techniques to enrich the training dataset, ensuring model robustness

- **Q-tips: Question from Answer Generator** *2024*
  Tools: [Transformer, NLTK, BERT] [ ]
  - Developed a machine learning model for generating questions from the provided answer, aiming to improve automated content generation and information retrieval
  - Utilized transformer architectures, such as BERT and GPT, for advanced natural language understanding and response generation to enhance the relevance and accuracy of generated content
  - Implemented data augmentation and fine-tuning techniques on large-scale text datasets to optimize model performance and ensure high-quality question-answer outputs

- **Forge Of Valinor: An Infinite Craft Clone** *2024*
  Tools: [React, Express.js, Llama3, MongoDB] [GitHub]
  - Developed an AI-driven crafting game leveraging the Llama3 model for dynamic element generation.
  - Integrated a robust backend using Express.js and MongoDB to handle user data and game states efficiently.
  - Created a seamless React-based front-end for engaging gameplay and intuitive user experience.

- **War Of Wits: A Game Theory Simulation** *2024*
  Tools: [React, p5.js, Chart.js] [GitHub]
  - Simulated Axelrod's Tournament to analyze and visualize strategies solving the Prisoner's Dilemma problem.
  - Designed an interface with p5.js to demonstrate game theory concepts and outcomes.
  - Used Chart.js to represent data trends and performance metrics of different strategies.

PUBLICATIONS

C=CONFERENCE

[C.1] Samrat Kumar Adhikari, et al. (2024). **American Sign Language Classification using CNNs: A Comparative Study**. In *International Journal on Engineering Technology (InJET*, pp. 283-295. Kantipur Engineering College. April 2024, Kathmandu. DOI: 10.3126/injet.v1i2.66704

[C.2] Giri, G., KC, I., Khatiwada, P., Adhikari, S. K., & Shakya, S. (2025). **CNN-Based Bird Sound Detection: A Comparative Performance Study**. In *International Journal on Engineering Technology (InJET)*, 2(2), pp. 176–187. Kantipur Engineering College. June 2025, Kathmandu. DOI: 10.3126/injet.v2i2.78615

SKILLS

- **Programming Languages:** Python, JavaScript, C++
- **Web Technologies:** HTML, CSS, JavaScript, React, Express.js, Flask
- **Database Systems:** MongoDB, PostgreSQL
- **Data Science & Machine Learning:** TensorFlow, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, Plotly
- **Cloud Technologies:** AWS Cloud
- **Version Control:** Git
- **Specialized Area:** Natural Language Processing, Computer Vision, Audio Processing
- **Mathematical & Statistical Tools:** PowerBI
- **Other Tools & Technologies:** Linux, Bash, VS Code, Jupyter Notebook
- **Research Skills:** Literature Review, Statistical Modeling, Academic Writing

AWARDS

- **IOE Hult Prize Finalist** *2024*
  Hult Prize Foundation
  - Selected as a finalist in the Hult Prize IOE
  - Recognized for proposing a sustainable solution to plastic waste management

- **Winner at Rapid Coding** *2024*
  Aarohan 2.0
  - Secured first place in a fast-paced competitive programming contest
  - Acknowledged for outstanding performance in algorithmic challenges.

Leadership Experience

- **Organizer at KEC LITE** *2024*
  Kantipur Engineering College
  - Coordinated event logistics and managed a team of volunteers
  - Led the introduction of interactive workshops, enhancing attendee engagement

- **Organizer at AWS GenAI Bootcamp** *2024*
  AWS Cloud Club, Nepal
  - Oversaw event planning and speaker coordination
  - Implemented hands-on sessions, improving participant learning outcomes

Certifications

- **Microsoft:** Fundamentals of Generative AI *Jan 2024*
- **AWS:** Machine Learning Camper *May 2024*
- **Postman:** Postman API Fundamentals Student Expert *Sep 2024*
- **Kaggle:** Intro to SQL *Sep 2024*

Education

- **Kantipur Engineering College** *2021 - Present*
  Bachelor of Computer Engineering Dhapakhel, Lalitpur

- **Motherland Secondary School** *2020*
  Higher Secondary Level Education Pokhara, Kaski
  - GPA: 3.64/4.00

- **Global Collegiate School** *2017*
  Secondary Level Education Pokhara, Kaski
  - GPA: 3.80/4.00

References

1. **Er. Pralhad Chapagain**
   Division Assistant, Research, Training and Consultancy Division (RTCD)
   Kantipur Engineering College
   Email: pralhadchapagain@kec.edu.np
   Phone: +977-9849867329
   Relationship: Research Supervisor

2. **Er. Arun Chapagain**
   Senior Web Engineer
   Broadway Infosys
   Email: arunchapagain@gmail.com
   Phone: +977-9849985167
   Relationship: Mentor

3. **Er. Upendra Prasad Neupane**
   Cloud Club Captain
   AWS Cloud Club, Nepal
   Email: 076bct045.upendra@sagarmatha.edu.np
   Phone: +977-9861812090
   Relationship: Mentor