



Saumya Bhandari

Nationality: Nepalese **Date of birth:** 27/12/2000 **Gender:** Male

Phone number: (+977) 9843866411 **Email address:** saumyabhandary22@gmail.com

LinkedIn: <https://www.linkedin.com/in/saumya-bhandari-558b8a210/>

Website: <https://www.saumyabhandari.com.np>

Home: Kageshwori Manohara - 7, Kathmandu, Kathmandu (Nepal)

ABOUT ME

A proficient programmer with knowledge in Machine Learning - Deep Learning, Mathematics, Data Science, and Designing. I prefer to speak, interact and instruct with my machine in Python, Java and C as primary languages with fluent skills in any frameworks and tools based on these languages.

I am a versatile engineer with a strong background in the fundamental concepts of machine learning and practical experience in implementing these concepts in real-world projects.

Languages: Python, Java, C

I share efficient teamwork skills, speaking and presentation along with a dedicated share of interest in leadership.

WORK EXPERIENCE

Junior Machine Learning Engineer

Wiseyak Inc. [09/2022 – Current]

City: Kathmandu

Country: Nepal

1. Created a CNN-Transformer Hybrid network (ongoing) which is capable of handling video sequences for various tasks such as:
 - a. Pixel-wise Segmentation
 - b. Handling corrupted frames in hindsight
2. Research and Development on a Plant Disease Detection project (ongoing)
 - a. Creating a ontological knowledge-graph for tomato, it's cultivars and it's diseases
 - b. On Research of a CNN model, which uses the data available in Nepal, to correctly diagnose the disease in tomato.
3. Analyzed different datasets and handled the data on working for the entire machine learning pipeline for projects:
 - a. CNN-Transformer Hybrid Network
 - b. Plant Disease Detection
4. Studied about different architectures in CNNs and Sequence to Sequence models like RNN, LSTMs and Transformers and gathered mathematical understanding of them along with code implementation.

Machine Learning Intern

Namespace.jp / Chulo Solutions [05/2022 – 08/2022]

City: Lalitpur

Country: Nepal

- Worked with visualizations (2D and 3D) including and performing different statistical modeling tricks in given data in Numpy, Matplotlib, Seaborn and Pandas.
- Learned CSV to Database (SQL) implementation.
- Performing PCA, Eigen Interpretation and Transformation, VC dimension-analysis, etc. with practical implementation.
- Built an object detection model using pytorch from scratch referencing from different versions of YOLO V1, V2 and V3; used in waste management system.
- Implemented multiple deep learning topics like Artificial Neural Network, Convolutional Neural Network, SVMs from scratch with in depth mathematical understanding.

Team Lead at Herald R&D Pilot Team

Herald College Kathmandu

City: Kathmandu

Country: Nepal

Worked as a leader for Herald R&D pilot Team and educated the team members (organized classes) on various topics related to:

- Gave sessions and workshops on probabilistic Models (Continuous Distributions and Bayesian Models)
- Recommendation models (Built a Movie Recommendation System)
- Gave lecture classes on Linear Algebra (Inspired from Gilbert Strang's book ; Linear Algebra)
- ML algorithms implementation and discussion session on topics like Linear Regression, K-Means, Naive Bayes, KNN etc.
- Gave session on Data Science basics, (Data Visualization, Analysis and Data Filtering)

Leader at Herald UI Visuals Community

Herald College Kathmandu

City: Kathmandu

Country: Nepal

Engaged in team collaboration, project planning, and formulation of community. This experience has been playing an evident role in polishing my interpersonal skills, research, planning and modeling.

- Key role in planning and organizing the Highest Altitude Hackathon 2023 (ongoing)

IT Supervisor

House of Attorneys (Part Time) [05/2021 – Current]

City: Kathmandu

Country: Nepal

- Developed proper DBMS for recording client records, case files and information in MySQL database - using Java-DB connection.
- Developed firm website where clients could inquire and book appointments and those details would be stored and notified timely using the above SQL DBMS.

EDUCATION AND TRAINING

BSc. (Hons) Computer Science

Herald College Kathmandu

Address: Naxal, Kathmandu,

Field(s) of study: Computer Science

Final grade: First Class Honors – Level in EQF: EQF level 6

- Student Academic Representative 2019-2020 and 2020-2021. (2 Years)
- Hult Prize 2021 On Campus Winner
- Given multiple sessions on Machine Learning algorithms and concepts in different classes
- Market Sensei 2022 Winner
- Research Head at Herald DevCorps UI Visuals Community
- Leader at Herald DevCorps Biz Core Community
- Leader at Herald DevCorps Creators Community

Higher Secondary

Uniglobe College

Field(s) of study: Mathematics and Computer Science

Final grade: 3.29

- IT Club President
- High School Hackathon-2018 winner (android application development)
- High School Hackathon-2019 organizer
- Organized and participated in different events related to computer science and robotics throughout 2 years of high school

Secondary Level Education

The New Summit School

Final grade: 3.55

- School Council Member
- CCA Captain
- Student of the Year : 2015-2016

PROJECTS

CNN-Transformer Based Network for video Processing

[Current]

Supervised by: [Prof. Suresh Manandhar](#), [Mr. Suraj Prasai](#)

Developing a deep learning model which uses transformers to process sequence of image frames in a video, which can be applied in multi-task video processing like: De-Blurring video frames, Handling Frame Breakages, Tracking Objects etc.

Plant Disease Detection and Diagnosis

Supervised by: [Prof. Suresh Manandhar](#)

1. Creating a comprehensive knowledge graph of tomato and its different diseases, including the causes and symptoms of each disease.
2. Using this knowledge graph, I am developing a CNN-Transformer model that can accurately diagnose a plant's disease and provide feedback to farmers.
3. The goal of this project is to provide farmers with a reliable and efficient tool for diagnosing tomato plant diseases, which can help to improve crop yields and reduce losses due to disease.

GOPI-KISNA: THE BIG DATA ANALYTICS IN MOVIE RECOMMENDATION SYSTEM

Supervisor: [Er. Jnaneshwor Bohara](#)

Wrote an academic paper on the project Gopi-Kisna built using Apache-Spark and implemented Elastic Search with ALS algorithm whose object was to recommend movies for the movie "watch party" of the students, that would be hosted in the college every Friday.

Object Detection System using different architectures of YOLO.

Supervisor: [Mr. Samip Rai](#)

Created a CNN model from scratch to referencing YOLO V1, V2 and V3 to detect objects in a given image frame for waste management.

The Pathfinder: A Computer Vision Based Navigation System

Supervised by: [Mr. Sangay Lama](#)

Used Differentiable Feature Clustering method of unsupervised learning to train Convolutional Neural Network to segment movable path and give instructions in a given image for any self driving / movable system.

Course Management System

- Built a course management system for a university, using Java and JDBCConnector in SQL database.
- A big project, the link to the UML diagram is provided below:

Link: [https://github.com/SaumyaBhandari/CourseManagementSystem/blob/main/UML CLASS DIAGRAM.pdf](https://github.com/SaumyaBhandari/CourseManagementSystem/blob/main/UML%20CLASS%20DIAGRAM.pdf)

QualityPic: A CNN based image super sampling system

Supervised by: [Mr. Siman Giri](#)

Created a SRCNN model to train a Fully Convolutional Neural Network to super sample a lower resolution image to a higher resolution with a better PSNR.

License Plate Detection

Created a system which in in given an image of vehicle, detects the license plate of vehicles using OpenCV and Py-Tesseract.

Other Sample Machine Learning Projects Including:

- Music Genre Prediction
- Image Classification
- Optimization Methods from scratch
- Support Vector Machines
- PCAs and Dimensionality Reduction using Eigen Decomposition and SVD
- Movies Recommendation System using Spark
- [and much more here.](#)

ORGANISATIONAL SKILLS

Skills that come in handy:

- Critical Analysis
- Presentation & Public Speaking
- Communication
- Brainstorming
- Planning and Decision Making

HOBBIES AND INTERESTS

Active Research Areas

- Transformer Neural Networks
- Data Storage and Loading Optimization
- Convolutional Neural Networks
- Deep Computer Vision
- Sequence to Sequence Models
- Linear Algebra and Bayesian Probability
- Machine Learning Algorithms