

# Kamlesh Rana Bhat

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## OBJECTIVE

Aspiring Computer Science professional specializing in medical image analysis, prognostic predictive models, and radiomics. Proficient in medical image processing with a solid foundation in developing AI-driven solutions for Medical diagnosis. Seeking opportunities to apply my skills in a dynamic environment, contributing to AI for medical innovations.

## EDUCATION

**Bachelor of Engineering (B.E) - Computer Engineering** 2019 – 2024  
Institute of Engineering, Tribuvan University  
Kathmandu, Nepal

## SKILLS

**Languages:** Python, C++

**Libraries:** PyTorch, TensorFlow, NumPy, Scikit-learn, Pandas, Open-CV, Flask, Seaborn

**Machine learning:** Feature Engineering, Optimization, Modeling, EDA, Contrastive Learning, Medical Image Processing, Deep Learning

**Tools:** Git, Excel, VS Code, Jupyter Notebook, Conda, Microsoft Office, Heroku

**Soft Skills:** Problem-Solving, Communication, Mass Presentation, Leadership, Team Collaboration, Creativity

## RESEARCH EXPERIENCE

**Research Assistant** 2024 - Present  
**NepAI Applied Mathematics and Informatics Institute for Research (NAAMII)**

- Medical Image(CT image) analysis for tumor detection and prognosis
- Spatial segmentation of tumor and it's localization
- Medical Image Processing

**Undergraduate Research Student** 2023 - 2024  
**Pashchimanchal Campus, Tribhuvan University**

- Research on Medical Diagnosis using AI in collaboration with 4 different hospitals in Nepal
- Data-collection and surveys with patients at hospital (437 patients)
- Collaborate and coordinate with faculty, doctors, health workers and medical staffs for data validation
- Conference Presentation at Gandaki University International Conference-January 3-5, 2024

## PAPER AND PUBLICATIONS

- **K. Ranabhat, I. P. Paneru, I. Sharma, and K. Pathak.** *Early Stage Diagnosis of Diabetic Retinopathy using Nested U-Net Architecture.* Under review at *Health Informatics Journal*.

## PROJECTS

**Early Stage Diagnosis of Diabetic Retinopathy Using Deep Learning.**

- Image processing of "Fundus" images (CLAHE enhancement and Detail Preservation)
- Blood vessel segmentation for RoI extraction using Nested U-Net architecture L4 with mean Intersection over Union (IoU) of 0.73 and a loss of -0.52
- Stage classification of DR using RoI extracted with an accuracy of 95.41%
- Dataset used: APTOS database

## **Non-Invasive Detection and Stage Classification of Anemia in Pregnant Women in Nepal Using Image of Conjunctiva of the Eye.**

- Data collection with coordination with 4 different hospitals of Nepal from 437 different patients
- Data labeling and Image processing
- RoI extraction i.e Conjunctiva of the eye using U-Net architecture
- Stage classification of Anemia using extracted conjunctiva of the eye with an accuracy of 81.30%
- Model validation with real patients using mobile application

## **AWARDS AND ACHIEVEMENTS**

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- **University Grant Commission – Mini-Research Grant (2023)**  
Awarded for the project 'Anemia Detection in Pregnant Women in Nepal Using Deep Learning'
- **OpenStreetMap(OSM) Hackfest, Runner Up (2023)**  
Awarded for the Best **Tours and Travels Management WebApp** with AI integrated recommendation system.

## **REFERENCES**

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**Taman Upadhaya, PhD**  
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