**AASMA DAHAL**

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**Objective:**

Enthusiastic graduate with demonstrated initiative, excellent communication skills, and strong expertise in Biomedical instrumentation, device application and servicing, biomedical data analysis, and modeling making a measurable contribution to the biomedical Engineering space.

**Education:  
Florida International University**, **USA GPA 3.55**

Master of Science in Biomedical Engineering (MS**) May 2023**

**Visvesvaraya Technological University (VTU), India** **75%**

Bachelor’s in biomedical engineering (BE), **July 2017**

**Achievements and Awards:**

* **Fulbright Foreign Student Fellowship** (**Nepal 2021-2023)**
* Best Paper award on a paper, "Distinguishing Staghorn and struvite kidney stone by using GLCM

and Pixel Intensity parameters”, in National Conference on Biomedical Signal and Image

Processing (NCBSI)- 2016 in India

* **University 10th rank** in the second semester of undergraduate level in 2014.
* **University 6th Rank** in the first semester of undergraduate level in 2013

**Research Experience and Projects:   
Cardiovascular Matrix Remodeling Lab, Miami, Florida Dec 2021- Present**

Department of Biomedical Engineering

*Research Fellow (Fulbright Fellow-Nepal)*

* Study the correlation between elastin fiber and melanocytes in the heart valve in a mouse model
* Perform Aortic valve leaflet extraction from mice, Immunostaining, confocal imaging, and data

quantification.

* Contribute to generating various dimensions of metrics by executing multiple imaging techniques
* Process multiple imaging outputs using Matlab through a rigorous process of loading, filtering, and applying aggregate functions to generate meaningful insights.
* Use Graphpad and R to ingest the data, clean the data and generate data visualization using different graphs plots.
* Use comparative analysis on multiple mouse models to generate a conclusive analysis of each metric dimension.

**Visvesvaraya Technological University Feb 2017 - Jun 2017**

*Automatic Analysis of Dental Diseases*

* Proposed a system for the diagnosis of dental diseases for the replacement of X-rays in disease diagnosis.
* Performed imaging of the diseased teeth using multiple imaging modalities i.e., NIR, Thermal, and Digital camera.
* Processed multiple imaging outputs using Matlab through a rigorous process of loading, filtering, and applying aggregate functions, Pixel Intensity Matrix Parameters to generate meaningful insights.
* Used comparative analysis on multiple dental diseases to generate a conclusive analysis of each metric dimension.
* The system came out with 86.9% accuracy.

**Nobel Medical College Teaching HospitalMay 2019-Jun 2019**

*Sample Collection Booth*

* Built a Covid sample collection portable booth during covid for the hospital during my tenure in the hospital and distributed it in various zonal and regional hospitals in Nepal.

**Nobel Medical College Teaching HospitalMay 2019-Jun 2019**

*Sensor-based Hand sanitizing system*

* A mini-project for IR sensor-based hand sanitizing system during Covid days in order to provide a safe method for hand sanitization in the hospital during my tenure as Head Bio-Medical Engineer in the hospital.
* All the resources used were taken from scraps from the hospital
* A motor pump 12V DC, an IR sensor, a relay switch, and a battery were used to drive the system.

**Work Experience:**

**Nobel Medical College Teaching Hospital, Biratnagar, Nepal Apr 2018-July 2021**

Department of Biomedical Engineering  
*Head of the Department July 2018–July 2021*

* Advised hospital administration on the planning, acquisition, purchase, and use of critical care, radiology, therapeutic and diagnostic devices.
* Adjusted, maintained, repaired, and provided technical support for all biomedical equipment in the hospital.
* Monitored, evaluated, and encouraged the work of all other staff in the department.
* Provided service and maintenance guidance of all medical equipment in various departments of the hospital.

*Biomedical Engineer Apr 2018-July**2018*

* Performed Service and maintenance of all medical equipment like critical care, radiology, therapeutic and diagnostic devices.in various departments of the hospital.
* Trained the doctors, nurses, and health professionals about the application and proper use of medical devices in the hospital.

**Kanchaneshwor Consultants Dec 2020-April 2021**

*Technical Advisor*

* Designed and proposed a Detailed Project for the hospital infrastructure improvement of a Zonal hospital into Regional Hospital.
* The design was selected and approved by a committee of experts and the infrastructure development is in progress and is planned to be completed by October 2024.

**Purbanchal University Teaching Hospital, Gothgaun, Nepal April 2019 - July 2021**

*Technical counselor*

* Guided hospital administration in planning and use of medical equipment for the smooth functioning of the university hospital
* Provided technical support in the procurement of critical care, radiology, therapeutic and diagnostic biomedical equipment in the university hospital.

**Himalayan Darshan College Biratnagar, Nepal July 2017 - April 2018**

*Teaching Assistant*

* Guided students in solving problems relating to mathematics and numerical methods.
* Mentored the BSc. CSIT students in labs and help them have a clear understanding of the subject matter.
* Evaluated the students based on assignments and assessments.

**Publication/Seminars:**

* *Presenter-* Review paper “Use of internet of things in medical and health care” | National level technical symposium, Neurotechnoblitz - 2016 | India
* *Presenter-* Paper “Distinguishing Staghorn and Struvite kidney stones using GLCM and Pixel Intensity Parameters” | National Conference on Biomedical Signal and image Processing-2016| India
* *Presenter-* Review paper “Bionic eye” | National level technical symposium Clonoelectric-2015| India
* *Presenter-*Technical Seminar on “Wearable Optical-Digital Assistive Device for Low Vision students” at ACS College of Engineering in February 2017
* *Presenter*- Technical Seminar on “An Off-Bed Detection and Bathroom Accident Monitor System for Nursing Home” at ACS College of Engineering in April 2017
* *Participant- “*Fulbright Foreign Student Enrichment Seminar-From Lab to Market” |Boston, USA |April 2022
* *Participant- “*Florida International Leadership Conference” | Lake Placid, Florida, USA| April 2022
* *Participant- “*Occupational Radiation Protection and Dosimetry and Launching of Dosimetry Service in Province No 1” | September 2018|Nepal

**Leadership/Volunteer:  
Nepal Engineering Association (NEA) August 2017 to present**

*Member*

* Organized technical workshops, training, and seminars in order to improve the technical skills of engineers in Nepal.
* Conducted annual elections for the selection of committee members for the Nepal Engineering Association.

**Lions Club of Biratnagar Green City, Biratnagar, Nepal August 2017 to present**

*Member*

* Organized various community welfare and relief programs in and around Biratnagar City in Nepal.

**Skills:**

* Technical: MATLAB, R, GraphPad, ImageJ/Fiji, Microsoft Word, Excel, PowerPoint
* Hands-on skills: Confocal Microscopy, Mouse Dissection, Western blotting, Medical Device Servicing.

**Languages:**

* Proficient in Nepali, English, and Hindi.