Saramsha Dotel

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I am a Machine Learning Engineer with an experience of 2 years in the industry. My research interests include Computer Vision and Natural Language Processing and adapting them to tackle problems in the developing world.

EDUCATION

Bachelors in Computer Engineering — *Institute of Engineering, Pulchowk Campus*

December 2015 - September 2019

Batch Topper | Aggregate Score: **85.3% (Distinction)**

High School (Science Specialization) — *St. Xavier's College, Maitighar*

July 2013 - June 2015

Board Examination Score: **85.1% (Distinction)**

TRAINING & CERTIFICATION

Micromasters in Artificial Intelligence — *edX, Columbia University*

April 2018 - Present

Enrolled in the program as a recipient of the Fusemachines AI Fellowship. The program provides a rigorous theoretical foundation in AI with courses in AI, ML, Robotics and CGI.

Nanodegree in Natural Language Processing — *Udacity*

March 2020 - May 2020

Completed a 3 months nanodegree program on Natural Language Processing which included development of projects like POS tagger, machine translation and speech recognizer

PUBLICATIONS

Dotel, S., Shrestha, A., Bhusal, A., Pathak, R., Shakya, A., Pandey, S.P. (2020). **Disaster Assessment from Satellite Imagery by Analysing Topographical Features Using Deep Learning.** *IVSP'20: Proceedings of the 2020 2nd International Conference on Image, Video and Signal Processing*, 86-92

This paper explores the application of deep learning techniques like semantic segmentation and image classification to identify the regions impacted by natural disasters like flood. It documents the results of assessing the damage due to disasters in rural as well as urban settings.

WORK EXPERIENCE

Co-founder & CTO — *Upsilon Technologies Pvt. Ltd.*

September 2020 - Present

- Co-founded a startup that develops AI powered software products. Designed, developed and launched a mobile app "Paana" that summarizes news from top sources and provides a personalized feed for the users.

Associate Machine Learning Engineer — *Fusemachines Pvt. Ltd.*

September 2019 - September 2020

- Worked in the development of an Optical Character Recognition system: "FuseExtract" that digitizes Nepali and English text documents.
- Built predictive models based on time series analysis to forecast the sales and revenue of a Fortune 1000 video game holding company.

AI Content Creator — *Fusemachines Pvt. Ltd.*

October 2019 - December 2019

- Designed the syllabus and created the notes, assignments and quizzes of Linear Algebra, Calculus, Statistics and Deep Learning for the online artificial intelligence course: FuseAI.

Software Engineering Intern (Part-time) — *Sireto Technology Pvt. Ltd.*

March 2019 - July 2019

- Implemented containerization using Docker to deploy and serve a Machine Learning model in production.

Software Engineering Intern — *LIS Nepal Pvt. Ltd.*

January 2019 - July 2019

- Developed an order matching engine that matches the buy and sell orders of a stock market. The application was demonstrated as a prototype for the electronic system of Nepal Stock Exchange (NEPSE).

AWARDS AND ACHIEVEMENTS

Smart Urban Technology Challenge Winner (2018)

Member of the team that developed an AI based traffic mobility analytics platform and was selected as the winner of the category "Urban Infrastructure" in a nationwide competition amongst 150+ teams. The competition was organized by the government of Nepal.

Ncell Academic Excellence Awards (2016, 2017 and 2019)

Recipient of the Ncell Academic Excellence Award for 3 years: 2016, 2017 and 2019. The award is given to the student securing the highest aggregate marks in Computer Engineering in Pulchowk Campus for the given academic calendar year.

Hult Prize at Tribhuvan University Winner (2017)

Member of the team that won the Hult Prize at Tribhuvan University and participated in the Hult Prize Regional Finals in Dubai,UAE in 2017. The Hult Prize is the biggest social entrepreneurship competition for students all around the world.

LOCUS Hack-a-week Winner (2018)

Member of the team that won the annual Hack-a-week competition of LOCUS in the year 2018, which is a week long application development (hackathon) competition.

SKILLS

- **Programming:** C++, Python, Javascript
- **Web Development:** HTML, CSS, React, NodeJS, Django, FastAPI
- **Machine Learning:** Pytorch, Tensorflow, Scikit-learn, Keras
- **Mobile App Development:** Flutter, Dart
- **Data Analysis and Visualization:** numpy, pandas, matplotlib
- **Database:** PostgreSQL, MySQL, MongoDB.
- **Graphics Designing:** Adobe Photoshop, Figma.
- **DevOps:** Git, Docker, AWS.

PROJECTS

Disaster Impact Assessment from Satellite Imagery — *Undergraduate Thesis*

A research project that utilizes computer vision and deep learning techniques like semantic segmentation and image classification to identify the regions in satellite images that are affected by natural disasters like floods. The project was supported by the University Grant Commission under a Collaborative Research Grant.

Traffic Mobility Analytics Platform — *Undergraduate Minor Project*

A Computer Vision based software to classify and count the total number of vehicles in the road and estimate the road occupancy. Also a part of the project is the Nepali Vehicles Dataset prepared to train the object detection model.

University Portal: A classroom management system — *LOCUS 2018 Hack-a-week*

A full-fledged classroom management web portal. The software allows management of typical university entities like teachers, students, courses, admissions, assignments and notices.

Product With Story: An e-commerce platform — *Hult Prize 2017*

A prototype of an e-commerce platform that allows micro-entrepreneurs to sell their products and expose their skills and stories.

EXTRA CURRICULARS

Volunteer — *3rd IEEE ICCCS 2018*

October 2018

Served as a volunteer in the 3rd IEEE International Conference on Computing, Communication and Security 2018 organized in IOE, Pulchowk Campus in October, 2018.

Student Coordinator — *Big Data Workshop*

June 2018

Coordinated the organization of a workshop on Big Data mentored by industry professionals. The event was organized by IEEE Nepal Subsection in association with IIT Delhi.

Vice President — *The SET Council, St.Xavier's College*

May 2014 - May 2015

Took the role of Vice President of the student lead organization of St.Xavier's College, Nepal that focused on all-round personality development in students by organizing seminars, workshops, exhibitions and social campaigns.

REFERENCE

Dr. Aman Shakya

Asst. Professor, Department of Electronics and Computer Engineering, IOE, Pulchowk Campus
Program Coordinator, MSc. in Computer System and Knowledge Engineering

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