

Diwas Pandey

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Education

Washington State University

M.S. IN COMPUTER SCIENCE

- Graduate Teaching Assistant, Full Merit Award Winner

Salmon Creek, Washington

Aug. 2022 - Apr. 2024

IOE, Tribhuvan University, Nepal

B.S. IN COMPUTER ENGINEERING

- Graduated 2021 - 79.04%, Full Scholarship Award Winner
- Major Project - Real Time Number Plate Recognition System using Computer Vision

Kathmandu, Nepal

Oct. 2016 - May. 2021

Experience

Bottle Technology, Pvt. Ltd.

TEAM LEAD, MACHINE LEARNING ENGINEER LEVEL II

- Worked on Smart Advertisement for tracking & analyzing viewership of advertisement by detecting Pedestrians and Vehicles.
- Developed model for CV based Face Recognition & Attendance System - RetinaFace & Rasp Pi.
- Developed & released Nepali to Roman Transliteration PyPI package to the python community.
- Collected & Prepared the Citizenship dataset for OCR along with Image Alignment.
- Developed OCR Model for Nepali Citizenship with NER, implemented on Devanagari & English Script.
- Researched on OCR tools like Pytesseract, NanoNets, EasyOCR, AWS Textract, and AWS Rekognition .
- Deployed ML models on Docker & EC2 - Flask, Fast API.
- Single-handedly helped train and translate Interns into full-time employees with professional characteristics.

Jhamsikhel, Lalitpur Nepal

July 2021 - June 2022

Genese Cloud Academy

AWS AI/ML INTERESTSHIP 2020

- Services Learnt : EC2, S3, Lambda, Polly, Lex, Boto3, Textract, Rekognition
- Built EC2 websites integrating S3 and relational databases with load balancing
- Designed temperature conversion chatbot, market chatbot using Lex and Polly
- Developed Corona cases visualizing and predicting web applications and worked on various AI ML projects on Sage-maker

Kathmandu, Nepal

Aug 2020 - Dec 2020

aihubprojects.com

FOUNDER ADMIN & CONTENT WRITER

- Designed & published Machine Learning algorithms & python book with scratch implementation
- Published various articles and project tutorials on ML, NLP, and Computer Vision
- Collaborated with VIT Vellore India, IIT Bangalore & various Nepalese Colleges as technical partner
- Published various articles and project tutorials on ML, NLP and Computer Vision

Kathmandu Nepal

Nov. 2019 - Present

Machine Learning Projects

OCR Implementation on Nepali Citizenship

TOOLS USED : PYTHON, OPENCV, NER SPACY

- Collected & Enhanced Nepali Citizenship to create 20k+ best dataset
- Performed Image alignment to check skewness and rotation
- Extracted text information of backside of the citizenship using EasyOCR and used NER Spacy to map information to respected entities
- Used custom trained OCR model to extract Devanagari Script
- Created rule-based transliteration PyPI package to romanize Devanagari Script
- Developed flask API for OCR & Transliteration module and deployed on EC2 & Docker

Fake License Plate Generation

TOOLS USED : PYHTON, OPENCV, GAN

- Applied computer graphic scripts and Generative Adversarial Networks to generate and augment a large number of annotated, synthesized license plate images
- Generated and augmented data were mixed and used as training data for the license plate recognition network

Real Time Number Plate Recognition System

TOOLS USED :

- YOLO for vehicle detection and ROI techniques to crop License Plate region
- Implemented Mean-SD algorithm to segment License Plate Characters
- Trained a model on Keras to predict and classify the segmented character
- Collected over 10k training and test dataset by cropping the image of vehicles and license plates

Emotional state Classification from EEG Data

ALGORITHM USED : RANDOM FOREST, CNN, LSTM, RNN

- Performed Data Cleaning, Data Visualization & Data Augmentation on 25k Dataset
- Obtained 85% accuracy on RNN and proposed it as the best

River Network Extraction From Satellite Images

TOOLS USED : PYTHON, OPENCV, U-NET

- Collected, Enhanced & Augmented 18k+ Satellite Images Dataset
- Trained a model on U-Net network to obtain binary masks of water surfaces
- Deployed the model on Flask - EC2

Corona Cases Visualization & Forecasting

TOOLS USED : SCIKIT-LEARN, PANDAS, NUMPY, SEABORN, PLOTLY

- Visualized Corona cases in World, Asia and in Nepal and forecasted the future trends of Corona cases
- Designed and developed the model on AWS Sagemaker

Blood Cancer Detection Using CNN

TOOLS USED: PYTHON, OPENCV, PYTORCH

- Designed convolution network that inputs a blood cell images and outputs whether the cell is infected with cancer
- Developed the model with precision score of 0.75 and accuracy score of 0.78

Diabetes Prediction using K-means

TOOLS USED : PANDAS, NUMPY, SCIKIT-LEARN, SCIPY, MATPLOTLIB, SEABORN

- Created & published tutorials on website with Flask implementation implemented on Heroku

Skills

Programming	Python, C++, Haskell
AI Tools	Scikit-learn, OpenCV, PyTorch, Plotly, Numpy, Pandas, Sagemaker
AWS Tools	EC2, S3, Sagemaker, AWS Rekognition, AWS Lambda
IDE	Visual Studio, Jupyter Notebook, Google Colab
Back-end	Flask API, FAST API, Docker
Software/Tools	Ubuntu 20.04, Windows 11, Git, Heroku, Wordpress
Languages	English, Nepali, Hindi

Presentation & Publication

Poster Presentation : Real Time Number Plate Recognition System

Kathmandu, Nepal

ACEM SET CONFERENCE 2020

March, 2020

- Introduced the concept of Real Time Number plate recognition system and it's usefulness in context of Nepal
- Conducted brief meeting with stakeholders & Traffic Management team of Nepal on it's implementation

Kindle Publication : Ultimate Guide to Python Basics

Kathmandu, Nepal

AMAZON KINDLE

May, 2020

- Published a book on Ultimate Guide to Python Basics Kindle Edition