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RESEARCH AREA

The Intersection of Computer Vision, Deep Learning, and Machine Learning.

EMPLOYMENT

Senior Machine Learning Engineer **HomeZire** **June 2022 - Present**

- Senior Machine Learning Engineer to make an AI-enabled platform for an ultimate home upgrade experience.
- Building a recommendation system to recommend the best home upgrade packages and working on a computer vision model (DALL-E) that will generate a dream house image.

Assistant Lecturer **Janabhawana Campus** **Dec 2021 - Present**

- Taught 5 full-credit Bachelor in Computer Application - Tribhuvan University affiliates courses in Spring and Summer 2022. *The subjects include Advance Programming in Java, Network Programming in Java, Object Oriented Java Programming, Cloud Computing, and Machine Learning with Python*, with an average rating of 4.7 out of 5.0.

AI Research Scientist **HeHealth** **Feb 2022 - April 2022**

- Research on synthetic datasets generated from a few authentic disease images.
- Develop Generative Adversarial Networks (GANs) models for high-quality synthetic disease image generation, which is used to increase the model's accuracy in disease identification.
- Team leader and trainer to use research to develop products.

Machine Learning Engineer **Wiseyak Inc.** **Dec 2020 - Aug 2021**

- Worked as a part of the international team for a few months, responsible for Machine learning/Computer vision solutions research and design of actual healthcare products. Developed API/UIs for machine learning disease recognition model.
- Designed Machine Learning Custom Pipeline for Medical Image Diagnosis related to any disease for automatic Training of Machine learning models actually by the user online. Researched, and developed a Deep Learning Medical Image Diagnosis Model: Diabetic Retinopathy, Skin Lesion, and Lung Disease Detection Model with significant performance improvement.

Machine Learning Research, Intern **NAAMII** **Spring 2020**

- Work under Prof. Dr. Suresh Manandhar for research related to NLP and computer vision. Build cycle GAN, Text2Image GAN model to synthesize handwritten generation. Use that to improve recognition of handwritten recognition model accuracy.
- Develop a language model to improve the handwritten image recognition model that can be detected in real-time.

Machine Learning Engineer, Intern **Mpercept Technology** **Fall 2019**

- Task was to design efficient OCR systems that recognize documents. I was able to create a system to acknowledge documents in multiple styles.
- Analyzed the data of customers and performed customer segmentation and built the predictive model to recommend products based on their history of purchase. I found that the sales revenue increased by 5% and customer satisfaction improved by 10%.

LANGUAGES AND TECHNOLOGIES

- Programming Languages - Python, Java(Intermediate), C++ (Intermediate),
- Operating System - Linux, Windows, Mac OS
- Database - MySQL, PostgreSQL
- Frameworks and tools - Pycharm, PyTorch, Tensorflow, OpenCV, Scikit-Learn, Pandas, Flask, SQLAlchemy
- Others - GitHub, Docker, React, Spark, NLTK, Nginx, MLOps

EDUCATION

Kathmandu, Nepal

Tribhuvan University

July 2015- Nov 2019

. B.E in Computer Engineering. Percentage: 80.98/100

- Main coursework: Data Structures and Algorithms, Object-Oriented Analysis and Design, Computer Architecture, Artificial Intelligence, Digital Image Processing, and Pattern Recognition, Database Systems, Operating Systems, Project Management.

B.E. MAJOR PROJECT

- Build Handwritten Text Recognition with Deep Learning with CER 4.32%. Uses CNN, LSTM, and CTC loss functions and is trained on an IAM dataset and a self-created dataset that can detect handwritten text in real-time.
- Developed an intelligent traffic system prototype using computer vision and image processing, that automatically adjusts traffic lights on the junction based on the number of vehicles on each side and prioritizes emergency vehicles. Use YoloV3 to detect vehicles and distinguish emergency vehicles.

ACHIEVEMENTS AND ADDITIONAL EXPERIENCE

- **Excellence Award, Wiseyak Inc.:** Given for extraordinary performance in a quarter.
- **First Prize, Instant Software Competition:** Awarded First prize in Inter-College Instant Software Competition.
- **Top 5, Project competition:** Achieve top five twice for the National Technology Festival project competition all over Nepal.
- **Four-year Merit Scholarship:** Awarded a merit scholarship in B.E. for an outstanding academic record.
- **Member- IT Club (2017-2019):** Organizes different seminars, training, and meetups. Coordinator and problem setter for the annual technical/coding fest of my college.
- **Blogging (2019-Present):** Blogs different articles related to AI on Medium.
- **Volunteer - Rotaract Club (2013-2015):** Worked on different social welfare and awareness programs in rural areas of Nepal.