Madan Baduwal

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EXPERIENCE

Fusemachines **Feb 2020 – Ongoing**
Machine Learning Engineer *Headquater: New York, USA*

- **Led** a team of engineers to develop an AI-enabled education platform**: fuseclassroom.com**. Currently, this platform is running around **60** colleges in Nepal, **20k** students are already engaged in this platform.
- Worked on several client-based ML projects from the US as well as internal ML projects of the company in the field of Machine learning. Worked on the whole **Machine Learning pipeline**.
- Involved in in-house training,workshops,math knowledge sharing session, and paper reading sessions on Deep Learning.
- Involved in **research**, design, review, and refinement of content - reading material, quizzes, assignments, and projects for Fusemachines AI Education Programs - "Micro DegreeTM in Artificial Intelligence, Machine Learning, Computer Vision,Natural Language Processing"

National Innovation Center **Jan 2021 – Ongoing**
Computer Vision Engineer(Researcher and Developer) *Kathmandu, Nepal*

- Collaborated with mechanical, electrical, and electronic hardware teams for the deployment of computer vision tasks in robots to create initial prototypes for waiter and service **robots** within 9 months.
- Run simulation tests on docker and Gazebo, Integrated and deployed computer vision tasks in robots with **Edge Devices** like Tensor Processing Units and Jetson Nano, RaspberryPI.
- Created few **rule base algorithms** from scratch to handling the motion and manipulation for the robot.
- Worked on several **computer vision tasks** : classification, Localization, Segmentation, Object Detection, Object Tracking, Face Recognition, and Image Captioning. Worked on the whole computer vision pipeline.

Omnibluetech **Aug 2018 — Feb 2019**
Software Engineering *Kathmandu, Nepal*

- Worked on **data structured and algorithms**, and different structured and unstructured database systems.
- Worked on designing and developing **web applications** using Front-end technology HTML5, CSS, Bootstrap, Javascript, and backend technology Flask, Django, and WordPress.

PUBLICATION

1. PrakashRatnaPrajapati,SamikshaPoudel, **MadanBaduwal**,Burlakoti,S.,Pandey,S.P.(Apr.2021). Signatureverificationusingcon-volutionalneuralnetworkandautoencoder.JournaloftheInsti-tuteofEngineering,16,No.1,pp.33–40

PROJECTS

Student Status Engine | *Python3,Snowflake,Scikit-learn,Git,AWS* **January 2021 - june 2021**

- Created feature extractor that automatically extract features from the data warehouse(eg: snowflake).Applied supervise and unsupervised algorithms on extracted features to classify student status into different classes.
- Collaborated with back-end, front-end, and DevOps engineers to test and deployed model into large-scale production.

Question Ranking | *Python3,Snowflake,Scikit-learn,TensorFlow 2.0,Git,AWS* **jun 2021- sep 2021**

- Applied different text pre-processing and sentence embedding techniques to the millions of questions.
- Applied multiple classification algorithms to classify questions into different classes (eg: easy, medium, and difficult).Deployed best performing models in production.

Madan | | *Python3,Poetry,Loguru,Dynaconf,Fire,Pytest,Git,Github,pip3* **January 2021 - Ongoing**

- Madan is a free and open-source software library for machine learning. It can be used across a range of tasks but has a particular focus on training and inference of computer vision.
- To install and try: **pip install madan**

AI-basedAutonomousRobo| | *Python3,TensorFlow 2.0,ROS,Gazebo,TPU,J. nano,R. Pi* **January 2020 - Ongoing**

- Integrated computer vision tasks with robots.
- Implemented different algorithms in robot : Lane tracking algorithms to track the lane, and object detection algorithms detect the objects in front of it. Rule-based algorithms make decisions for the robot.

Text Extractor | *Jupyter Notebook,Python3,OpenCV* **July 2019 - October 2020**

- Research and experiment on building state-of-the-art image preprocessing techniques like erosion and dilation.
- Build a Framework that uses tesseract to extract information from form (eg : buyer name, seller name, etc.).

Hastakshar | *Python3,OpenCV,Keras,Django* **2018-2019**

- Research and experiment on image pre-processing techniques including grayscaling, noise reduction, resizing, etc using NumPy and OpenCV library.
- Offline signature verification system using CNN (Keras Tensorflow). Developed in Django with web interfaces.

Asteroid Smash | *C#,Unity* **2015-2016**

- Created own assets packages and models in unity.
- Implemented of reinforcement learning using ML-Agents to train enemy ship.

Websites and Android apps(with links) **2015 – 2019**

- Design and develop websites and apps for clients using different frameworks(web frameworks , Unity engine).
- Web apps : **horizonglobal.edu.np** , **youthcareer.edu.np**
- Android apps : **Antigravity Ball** , **Saveme** , **Beat Creator**

HONORS AND AWARDS

Tribhuvan University Merit-based scholarship **2015-2019**

- Awarded for securing the highest GPA in the Computer Engineering cohort in the 1rd, 2th and 4th semesters respectively. The scholarship was worth $ 1000 each semester.

Best Idea Winner **January 2017**

- Best idea winner of the Exhibition organized by Kantipur engineering college and sponsored by Neosphere. Neosphere offered 6 month Ethical Hacking course, which was nearly worth $ 200

Hackathon Runner-up **March 2018**

- 1st runner-up of hackathon organizes by Kathmandu University, kavre.The prize was worth $100.

Best Logic Code **July 2019**

- Best Logic Code winner organized by Sagarmatha engineering college.The prize was worth $60.

EDUCATION

Tribhuvan University, Institute of Engineering **2015 — 2019**

Bachelors in Computer Engineering *Kathmandu, Nepal*

- **CGPA**: 3.7/4

CERTIFICATIONS

- Certified Ethical Hacking (CEH) - Neosphere
- Neural Networks and Deep Learning - Coursera
- Sequence Model - Coursera
- Effective Client Communication - Fusemachines

EXTRA ACTIVITIES

- Lite Exhibition Participant, Kantipur Engineering College, 2015,2016,2017,2018
- Himalaya Exhibition (HEx) Participant, Himalay College of Engineering, 2017
- AI Workshop Participant , MPercept Technology Pvt , 2019
- Data Science Workshop Participant, F1Soft International Pvt. Ltd., 2019

TECHNICAL SKILLS

Languages: Python3, C,C++,Android, HTML/CSS, SQL,PostgreSQL, MySQL
Tools: Scipy,Numpy,Pandas,Matplotlib,Scikit-learn,Tensorflow,Opencv,NLTK,Jupyter Notebook,Conda
Familiar with: Latex,Linux,Mongodb,Git,Github,Docker,Django/MVT, Flask,Mlflow,Robot Operating System(ROS),Raspberry pi,Coral TPU,Unity game engine,Networking,SEO,Wordpress