

MADAN BADUWAL

MS student in Computer Science

✉ madanbaduwal100@gmail.com ☎ +1(432)3161183 📧 @MadanBaduwal 📧 @Madan Baduwal
🌐 madanbaduwal.github.io 📍 Odessa, Texas 🎓 [Madan Baduwal](#) </> [@madanbaduwal100](#)

RESEARCH INTERESTS

My research interests lie in **Machine Learning, Computer Vision, Natural Language Processing, Embodied AI** and **Cognitive Science**. In particular, I am interested in reverse-engineering the human mind to build embodied machines that can see, listen, speak, learn, and interact with human-level cognition and social intelligence.

EDUCATION

University Of Texas Permian Basin

Computer Science(M.S)

Jan. 2023-Ongoing

Texas, USA

- **GPA: 4/4**
- **Area of focus:** Phishing Detection Using Transformer
- **Relevant Courses:** Data Structure and Algorithm

Tribhuvan University, Institute of Engineering

Bachelors in Computer Engineering

2015 – 2019

Kathmandu, Nepal

- **Percentage: 72.38% Rank : 2/43**
- **Relevant Courses:** Artificial Intelligence, Data Structures and Algorithms, Image Processing & Pattern Recognition, Multimedia System, Big Data Technologies, Software Engineering, Probability and Statistics, Linear Algebra, Computer Organization & Architecture, Microprocessor, Computer Network, Operating System, C, C++

PUBLICATION

1. Prakash Ratna Prajapati, Samiksha Poudel, **Madan Baduwal**, S., Burlakoti, S., Pandey (Apr. 2021). Signature Verification using Convolutional Neural Network and Autoencoder Journal of the Institute of Engineering ,16, No.1, pp.33–40

WORK EXPERIENCE

University Of Texas Permian Basin

Graduate Student Assistant Editor, UTPB Journal Of Undergraduate Research

Mar 2023 – Ongoing

Odessa, Texas

- Assisting in the editing and proofreading of manuscripts for publication

Matrice.ai

Machine Learning Engineer

Nov 2022 – Feb 2023

Chicago

- Designed and implemented the machine learning pipeline software for computer vision problems i.e - data collection, data annotation, model training, model deploy.

BP Eye Foundation

Sr. Machine Learning & Computer Vision Engineer

May 2022 – Nov 2022

Kathmandu, Nepal

- Implemented semantic segmentation and detection algorithms for **otitis media** based on otoscopy images of the tympanic membrane with an accuracy of **85%** and deployed it as a scalable ML SAAS product on the Dell EMC server using the latest technologies of Django, React, Docker, Kubernetes, AWS, and CI/CD pipelines.

Fusemachines

Machine Learning Engineer

Feb 2020 – Feb 2022

Headquarter: New York

- Led a team of engineers to develop an AI-enabled education platform: **fuseclassroom.com**, this platform was running around **60** colleges in Nepal, and **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 and **automated and optimized** these projects using MLOPS technologies DVC, MLflow, Github, Jenkins, Kubeflow, Apache Airflow, and Datadog.
- Involved in in-house training, workshops, math knowledge-sharing sessions, and paper reading sessions on deep learning.
- Democratized AI by doing research, design, review, and refinement of content - reading material, quizzes, assignments, and projects for Fusemachines **AI Education Programs** - "Micro Degree in Artificial Intelligence, Machine Learning, Computer Vision, Natural Language Processing"

National Innovation Center

Jan 2021 – Dec 2021

Computer Vision Engineer(R & D)

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 a few **rule base algorithms** from scratch using python3 to handle the motion and manipulation of the robot.
- Implemented several **computer vision tasks**: classification, Localization, Segmentation, Object Detection, Object Tracking, and Face Recognition using Pytorch. Worked on the whole computer vision pipeline.

Omniblue-tech

Aug 2019 — Feb 2020

Software Engineer Intern

Kathmandu, Nepal

- Designed and implemented scalable APIs and background workers for third-party extract data from unstructured documents using Django rest APIs and AWS that serve millions of requests daily.
- Designed and developed **web applications** using Front-end technologies HTML5, CSS, Bootstrap, Javascript, and backend technologies Flask, Django, and WordPress.

TECHNICAL SKILLS

Languages : Python3, C, C++, Java, Android, JavaScript,C#, Bash, HTML/CSS, SQL

Python Packages : Scipy, Numpy, Pandas, Matplotlib, Scikit-learn, Tensorflow, Opencv, NLTK, Fastapi, BeautifulSoup, Regex, Jupyter Notebook, Conda

Databases and data warehouse : PostgreSQL, MySQL, MongoDB, Snowflake

Miscellaneous : Django, Flask, React, Node, WordPress, AWS, Microservices, Tableau, Latex, Jira, Linux, Git, Github, Docker, Kubernetes,CI/CD, Mlflow, Robot Operating System(ROS),Gazebo, Arduino, R.pi, C.TPU, J.Nano, Unity, SEO

ACHIEVEMENTS 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.

PROJECTS

WMC Global | *Python3,Scikit-learn,Git,Github,AWS,Docker,Kubernetes,CI/CD*

jun 2021 - Dec 2021

- Classify websites into phishing and non-phishing using clustering algorithms for **GoDaddy, Bitly, InfoBip, and ICANN under WMC global**.Transformed unstructured data into structured data format using **Regex**.

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

January 2021 - june 2021

- Created **feature extractor pipeline** that automatically extracts features from the data warehouse(eg: snowflake). Applied machine learning 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**.

AI-Robot |*Python3, TensorFlow 2.0, ROS,Gazebo,C.TPU,J. nano,R. Pi*

Jan 2021 – Sep 2021

- Retrain a classification model for Edge TPU using post-training quantization(**23fps,85% mAP** score with pre-training), face recognition using python face recognition library, depth calculation using real sense depth camera, Centroid based object tracking, and write rule base algorithm from scratch.
- Integrated and tested computer vision tasks into ROS, gazebo simulation environment and **implemented it into waiter and service robot**. Visualize robot sensors data into rviz.

Text Extractor | *Jupyter Notebook,Python3,OpenCV*

July 2019 - October 2020

- Research and experiment on building image preprocessing techniques like erosion and dilation.

- Build a Framework that uses google tesseract and regex to extract information from the form (eg: buyer name, seller name, etc.).

Hastakshar | *Python3, OpenCV, Keras, Django*

2018-2019

- Research and experiment on Image Localization to improve classifier model using NumPy and OpenCV library.
- Built signature verification CNN classifier system using Tensorflow. Developed Django web interfaces in local machine.

Android apps, Websites, and Packages | *C#, Unity, Python3, HTML, CSS*

2015 – 2019

- Android apps : Asteroid Smash, Antigravity Ball , Saveme , Beat Creator
- Web apps : horizonglobal.edu.np, youthcareer.edu.np
- Pypi package: **pip install madan**

COURSES COMPLETED AND 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
- Himalayan Exhibition (HEX) Participant, Himalayan College of Engineering, 2017
- AI Workshop Participant , MPercept Technology Pvt , 2019
- Data Science Workshop Participant, F1Soft International Pvt. Ltd., 2019