

# MADAN BADUWAL

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Result-driven graduate with 4+ years of work exp. seeking full-time roles (May '24) in AI & Software

## EDUCATION

**University of Texas Permian Basin, MS in Computer Science** | Texas, USA GPA: 4.0/4.0 Dec 2024  
**Tribhuvan University, B.E. in Computer Engineering** | Kathmandu, Nepal GPA: 72.38/100, rank: 2/43 Aug 2019

Scholarships: Graduate assistantships (\$5,000), highest GPA in the Computer Engineering cohort (3/7 semesters)(\$4,000)  
Conf. & Hackathons: Journal of the Institute of Engineering, 10+ Hackathons winners organized by different universities  
Courses: DSA | AI | Image Processing & Pattern Recognition | Big Data | Distributed Database Systems | Advanced Software/Web Development | Linear Algebra | Probability and Statistics | Microprocessor | Operating System | C/C++

## INDUSTRY EXPERIENCE

**Matrice.ai, Sr.Machine Learning Engineer** | Chicago, USA Nov 2022 – Feb 2023

- Designed and developed a no-code data-centric AI platform for building and deploying ML apps, which reduced user deployment time by 40% and development costs by 80% using Pytorch, React, Django, and AWS technologies.

**BP Eye Foundation, Sr.Machine Learning & Computer Vision Engineer** | Kathmandu, Nepal May 2022 – Nov 2022

- Optimized and automated semantic segmentation and detection for otitis media Otoscopy images of the tympanic membrane, driving \$100k of revenue annually by increasing the doctor-patient ratio by 1.5x, deployed the application as a SaaS product leveraging technologies such as Pytorch, Django, Tailwind, Dell EMC servers, and CI/CD.

**Fusemachines, Machine Learning Engineer** | New York, USA Feb 2020 – Feb 2022

- Led a 10-person team to develop an AI-enabled student progress tracking platform (fuseclassroom.com), doubling the teacher-student ratio to 1:30. Currently operational in ~60 Nepalese colleges with 20k active students.
- Orchestrated a phishing detection engine for over 10 clients under WMC Global, improving accuracy from 85% to 90% by selecting the optimal number of clusters using the silhouette score. Automate their workflow with MLOps technologies such as Docker, Kubernetes, DVC, MLflow, GitHub, Jenkins, Kubeflow, Apache Airflow, and Datadog.
- Conducted over 20+ trainings, workshops, knowledge-sharing, and paper reading sessions on mathematics and machine learning. Empower ~5k students's ML skills by collaborating with schools, colleges, and universities.
- Enriched AI affordable courses by researching, designing, reviewing, and refining content, including reading material, quizzes, assignments, and projects for Fusemachines AI Education Programs, specifically focusing on the "Micro Degree in Artificial Intelligence, Machine Learning, Computer Vision, and Natural Language Processing."

**National Innovation Center, Computer Vision Engineer(R & D)** | Kathmandu Nepal Jan 2011 - Dec 2021

- Led & collaborated with mechanical, electrical, and electronic hardware teams to deploy computer vision tasks in robots, resulting in the creation of initial prototypes for waiter and service robots within a span of nine months.
- Achieved 60% inference acceleration on computer vision tasks integrating into robots using quantization techniques and hardware-software accelerators like Google Coral TPU, NVIDIA J.Nano, Raspberry Pi., and Microsoft Azure.
- Implemented and fine-tuned computer vision tasks, including object detection, segmentation, tracking, face recognition, and depth estimation, using PyTorch and the Intel depth camera D435i, covering the entire vision pipeline.
- Improved pathfinding algorithms (A\* and Dijkstra), leading to a 20% reduction in execution time and faster NAV.

**Omnibluetech, Software Engineer Intern** | Kathmandu, Nepal Aug 2019 — Feb 2020

- Designed and developed Django REST APIs and AWS-based background workers capable of managing millions of daily requests, facilitating third-party entities in extracting data from unstructured documents in a scalable fashion.
- Implemented web applications using front-end and back-end technologies: HTML5, CSS, Javascript, and Django for retail stores and consultancies, resulting in a 15% increase in revenue for the company in the first quarter.

## RESEARCH EXPERIENCE

**University Of Texas Permian Basin, Graduate Assistant** | Texas, USA Jan 2024 – Ongoing

- Research on multimodal learning chatbots

**University Of Texas Permian Basin, Undergraduate Student Assistant Editor** | Texas, USA Mar 2023 – Ongoing

- Assisting in the editing and proofreading of manuscripts for publication under the direction of Prof.Rebecca Babcock and Prof.Mohamed K Zobaa.

## PUBLICATIONS

- 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

## SKILLS

Languages Python3, C, C++, Java, JavaScript, C#, Go, CUDA, CMake, Bash, LaTeX, SQL  
Packages Numpy, Pytorch, Tensorflow, Scikit-learn, XGBoost, Hugging Face, OpenCV, NLTK, Scipy,  
Databases PostgreSQL, MySQL, MongoDB, Snowflake, Spark, Hadoop, Redshift, Databrick, Kafka, Tableau, ETL  
Miscellaneous Django, AWS, Microservices, ROS, Gazebo, Arduino, R.pi, C.TPU, J.Nano, Git, Github, Docker, Kubernetes