MADAN BADUWAL

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EDUCATION

University of Texas Permian Basin | MS in Computer Science | Odessa, TX   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

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

INDUSTRY EXPERIENCE

Sr.Machine Learning Engineer | Matrice.ai | Chicago, IL   Nov 2022 – Feb 2023
- Designed and developed a no-code data-centric AI platform (matrice.ai) for building and deploying ML apps, reducing user deployment time by 40% and development costs by 80% using Pytorch, Django, and AWS technologies.

Sr.Machine Learning Engineer | BP Eye Foundation | Kathmandu, Nepal   May 2022 – Nov 2022
- Developed the ML app as a SaaS product for 5+ hospitals, using PyTorch, Django, CI/CD, and Dell EMC servers.
- Optimized and automated semantic segmentation and detection (acc. 85%) for otitis media Otoscopy images of the tympanic membrane using CNN, driving $100k of revenue annually by increasing the doctor-patient ratio by 1.5x.

Machine Learning Engineer | Fusemachines | New York, NY   Feb 2020 – Feb 2022
- Led a 10-person team to develop an AI-enabled student progress tracking platform (fuseclassroom.com), increasing the teacher-student ratio by 2x. 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, detecting millions of URLs per day.
- Conducted over 20+ trainings, workshops, knowledge-sharing, and paper reading sessions on mathematics and machine learning. Empower the ML skills of ∼5k students by collaborating with schools, colleges, and universities.
- Enriched affordable AI courses by researching, designing, reviewing, and refining content, including reading material, quizzes, assignments, and projects for Fusemachines AI Education Programs, focusing on AI, ML, CV, and NLP.

Computer Vision Engineer(R & D) | National Innovation Center | Kathmandu, Nepal   Jan 2021 - 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 9 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.

Software Engineer Intern | Omnibluetech | Kathmandu, Nepal   Aug 2019 — Feb 2020
- Devised and Engineered 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.
- Programmed 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

Graduate Research Assistant | University Of Texas Permian Basin | Odessa, TX   Jan 2024 – Ongoing
- Research on multimodal learning chatbots, i.e., in audio-visual learning and vision-language tasks.

Undergraduate Student Assistant Editor | University Of Texas Permian Basin | Odessa, TX   Mar 2023 – Ongoing
- Assisted in the editing and proofreading of the UTPB Journal of Undergraduate Research, Volume 5, 2023, and UG Research Book 2024 for publication under the direction of Prof.Rebecca Babcock and Prof.Mohamed K Zobaa.

PUBLICATIONS

- Prajapati, P.R., Poudel, S., **Baduwal, M.**, Burlakoti, S. and Panday, S.P., 2021. Signature Verification using Convolutional Neural Network and Autoencoder. Journal of the Institute of Engineering, 16(1).

SKILLS

AI / ML   Regressions, Decision Trees, SVM, Naive Bayes, KNN, DNNs, CNNs, GNNs, Transformers, Diffusion models
Languages   Python 3, R, Julia, MATLAB, C++, C, Java, JavaScript, C#, Go, Kotlin, Flutter, Bash, LaTeX, SQL
Packages   Pytorch, Tensorflow, JAX, Sklearn, Numpy, Pandas, Matplotlib, Scipy, OpenCV, NLTK, Hugging Face
Databases   Spark, Hadoop, PostgreSQL, MySQL, MongoDB, Snowflake, Databrick, Kafka, Tableau, PowerBI, ETL
Framework   Django, Node, Angular, React, React Native, Unity, Streamlit, Flask, Android Studio, RESTful API, ROS
DevOps   Git, Github, DVC, MLflow, SageMaker, Docker, Kubernetes, Jenkins, Airflow, Datadog, AWS, GCP, Azure

Projects: **madanbaduwal.github.io/projects**