Dhadkan Shrestha

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Dhadkan Shrestha - Google Scholar

SUMMARY

Passionate Data and AI/ML enthusiast with a strong background in deep learning, data analysis, and data visualization. Skilled in Python, SQL, Pytorch and various ML libraries. Excellent problem-solving, research, and collaboration abilities.

TECHNICAL SKILLS

Programming Languages: Python, Java, C++, SQL, MongoDB, PostgreSQL, DynamoDB
Big Data & Processing: Apache Spark, PySpark
Libraries & Frameworks: PyTorch, Tensorflow, NumPy, Pandas, PySpark, Scikit-learn, OpenCV, Docker, MS Excel,
BI & Visualization: Power BI, Tableau, Looker, Google Analytics
Version Control & CI/CD: Git, GitHub Actions
Cloud Platforms: AWS (S3, Lambda, RDS), GCP (BigQuery), Azure

PROJECTS

Human Pose Estimation of Yoga 2019 - 2020
Deep Learning Project(Group Project) *Python, TensorFlow, OpenCV, Android*

- Developed an end-to-end system for generating human skeleton and detecting them for yoga poses
- Utilized CNN and LSTM models for image feature map extraction on COCO dataset
- Built android app for the system where user can easily interact and get feedback regarding yoga poses live

Text summarization with Hyperparameter Tuning using Optuna with attention heatmap June 2024
Natural Language Processing *Python,Transformer, Heatmap*

- Development of a text summarization model using the **T5 transformer model, fine-tuned on the CNN/Daily Mail dataset**
- Tools and Libraries used are Transformers, Datasets, Optuna, MLflow, Google Colab
- Visualization of attention weights and an interactive summarization interface using 'ipywidgets'

PUBLICATIONS

- **D. Shrestha** and D. Valles, "**Evolving Autonomous Navigation: A NEAT Approach for Firefighting Rover Operations in Dynamic Environments**," 24th Annual IEEE International Conference on Electro Information Technology (EIT2024).
- **Shrestha, D**., & Valles, D. (2025). **Reinforced NEAT Algorithms for Autonomous Rover Navigation in Multi-Room Dynamic Scenario**. Fire, 8(2), 41. https://doi.org/10.3390/fire8020041
- D. Poudel, **D. Shrestha**, S. Bhattarai, and A. Ghimire, "**Comparison of machine learning algorithms in statistically imputed water potability dataset**," Journal of Innovations in Engineering Education, vol. 5, no. 1, pp. 38-46, Feb. 2023. doi: 10.3126/jiee.v5i1.42265.
- **D. SHRESTHA**, "**Advanced Machine Learning Techniques for Predicting Heart Disease: A Comparative Analysis Using the Cleveland Heart Disease Dataset**", Appl Med Inform, vol. 46, no. 3, Sep. 2024.
- **Shrestha D**, Nepal P, Gautam P, Oli P. **Human pose estimation for yoga using VGG-19 and COCO dataset: Development and implementation of a mobile application**. International Research Journal of Engineering and Technology 2024;11(8):355-62.
- **D. Shrestha**, P. Nepal, P. Gautam, and P. Oli, "**Real-time animal monitoring system using pulse, temperature, and GPS sensor**," World Journal of Advanced Research and Reviews, vol. 24, no. 3, pp. 1184–1198, Dec. 2024. [Online]. Available: https://doi.org/10.30574/wjarr.2024.24.3.3814.

EXPERIENCE

Graduate Research Assistantship Jan 2023 – Aug 2024
Texas State University *San Marcos, TX*

- **Conducted controlled data collection simulating falls in elderly individuals**. This dataset was later used to develop a machine learning model for fall anticipation, advancing fall detection technology and contributing to improvements in the quality of life for the elderly in the AI health sector.
- **Implemented an optimal solution** to handle missing data in CouchBase DB, enhancing data integrity and consistency
- **Resolved data collection issues** by debugging phone and watch apps using Android Studio, ensuring seamless and accurate data capture
- **Developed, optimized, and deployed a reinforcement learning model** for an autonomous firefighting rover using the NEAT algorithm in Python, achieving significant improvements in performance and efficiency

Data Analyst March 2021 – March 2022
Code Drop Tech *Kathmandu, Nepal*

- **Developed a SQL-based database** for a startup to track employee records and project assignments.
- Performed **data aggregation and visualization** using **Pandas, Matplotlib, and Seaborn**, identifying key trends, outliers, and performance metrics for strategic decision-making.
- Applied **machine learning techniques** using **Scikit-learn and AWS SageMaker** to categorize and analyze human eye-tracking data, aiding research in cognitive and behavioral sciences.
- Leveraged **Power BI, Tableau, and Looker** to create interactive dashboards and reports, providing actionable insights into company operations and employee productivity.

Machine Learning Engineer May 2020 – Sep 2020
Otermans Institute *Kathmandu, Nepal*

- Developed and deployed an AI-powered chatbot system using **AWS Lambda, Rasa, Python, and SQL**, ensuring scalable and cost-effective deployment.
- Built and optimized **NLP pipelines** for chat and web mining using **LSTM, Transformer models, and spaCy**, improving chatbot accuracy and natural language understanding.
- Used **Docker and Kubernetes** to containerize and orchestrate chatbot services, improving system reliability and deployment efficiency.

EDUCATION

Texas State University San Marcos, TX
M.S. in Computer Science *Jan 2023 – Dec 2024*

Thapathali Engineering Campus Kathmandu, Nepal
B.S. in Electronics and Communication Engineering *Sep 2016 – Apr 2021*

CERTIFICATIONS

- Google Data Analytics Course by Google
- Deep Learning Specialization and Natural Language Specialization by Coursera
- Data Science by DataCamp