Priyankar Choudhary

Machine Learning Researcher and Data Analyst

+39-3519890253 priyankarchoudhary1@gmail.com Milan, Italy
LinkedIn

Profile

AI Researcher and Data Scientist with 1.5 years of experience in developing and implementing machine learning models and conducting innovative research. Completed a Ph.D. in the Computer Science Engineering Department at IIT Ropar, India. Skilled in designing experiments, analyzing datasets, and utilizing computational tools to extract meaningful insights. Proficient in working with various machine learning frameworks and libraries to achieve research objectives, including experience with large language models such as LLaMA2 and GPT.

Areas of Expertise

Machine Learning and AI - Large Language Models (GPT-3.5, GPT-4, LLaMA2) - Zero-shot Learning - Few-shot Learning - Transfer Learning - Data Science - Data Cleaning - Data Preprocessing - Exploratory Data Analysis - Statistical Analysis - TensorFlow - PyTorch - scikit-learn - Hugging Face Transformers - Data Visualization (Matplotlib, Seaborn, Plotly) - Reporting and Presentations

Professional Experience

Researcher, *(EveryWare Lab, University of Milan)* **Milan, Italy** *09/2023 - present*

- Developed a model focused on enhancing usage of language models for smart-home assistance application.
- Implemented innovative approaches to improve the efficiency and intelligence of language models.

Senior Product Engineer, *(Vijna Labs Private Ltd.)* **Bengaluru, India** *01/2023 - 08/2023*

- Developed and deployed classification models using NVIDIA-TAO Framework.
- Build a software tool using opencv-python for object segmentation.
- Worked on object segmentation model

Education

Ph.D. Computer Science & Engineering *Indian Institute of Technology* **Ropar, India** *2018-2023*
Multimedia Systems, Mobile Wireless & Ad Hoc Networks, Advanced Computer Architecture, Data Structures & Algorithms.

M.Tech Computer Science & Engineering *The LNM Institute of Technology* **Jaipur, India** *2015-2017*
Relevant Courses: Machine Learning & Pattern Recognition, Big Data & Analytics, Data Mining, Information Retrieval & Web Search

B.Tech Information Technology *University College of Engineering* **Kota, India** *2010-2014*

Certifications, Achievements, & Extracurricular Activities

- Deep Learning (June 2018) - Swayam (NPTEL)
- Huawei HCIA-AI V3 Certification (2018) - Huawei
- Structuring Machine Learning Projects (2018) - Coursera
- Convolutional Neural Network (2018) - Coursera
- Neural Networks and Deep Learning (2018) - Coursera
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization (2018) - Coursera

Publications: Journal

1. **Choudhary P**, Goel N, Saini M. **A Survey on Seismic Sensor based Target Detection, Localization, Identification, and Activity Recognition**, ACM Computing Surveys. 2023 Feb;55(11):22817-27 **Impact Factor: 14.32, H-Index: 172**.

2. **Choudhary P**, Kumari P, Goel N, Saini M. **An Audio-Seismic Fusion Framework for Human Activity Recognition in an Outdoor Environment**. IEEE Sensors Journal. 2022 Sep. 27;22(23):22817-27 **Impact Factor: 4.32, H-Index: 132,**.

3. **Choudhary P**, Goel N, Saini M. **A Fingerprinting based Audio-Seismic Systems for Human Target Localization in an Outdoor Environment using Regression**. IEEE Sensors Journal. 2022 Feb 25;22(8):7944-60 **Impact Factor: 4.32, H-Index: 132**.

4. Ukiey A, Bedi A, **Choudhary P**, Saini M. **A highly robust deep learning technique for overlap detection using audio fingerprinting** (Submitted to Multimedia Tools and Applications, Springer).

5. Kumari P, **Choudhary P**, Atrey P, Saini M. **Concept Drift Challenge in Multimedia Anomaly Detection: A Case Study with Facial Datasets** (submitted to Signal Processing: Image Communication, Springer)

Publications: Conferences

1. Bhatt R, Singh S, **Choudhary P**, Saini M. **An Experimental Study of the Concept Drift Challenge in Farm Intrusion Detection using Audio**. In proceedings of 18^{th} IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS) 2022 Nov 29 (pp. 1-8). IEEE.

2. **Choudhary P.**, Kumari P., Goel N. and Saini M. **Low-Intensity Human Activity Recognition Framework using Audio Data in an Outdoor Environment**. In Computer Vision and Image Processing: 7^{th} International Conference, CVIP 2022, Nagpur, India, November 4–6, 2022, Revised Selected Papers, Part II 2023 May 7 (pp. 646-658). Cham: Springer Nature Switzerland.

3. Singhal G, **Choudhary P**, Abhishek V, Sweety S, Subramanian S, Goel N. **Cattle Collar: An End-to-End Multi-Model Framework for Cattle Monitoring**. In Proceedings of 5^{th} International Conference on Multimedia Information Processing and Retrieval (MIPR) 2022 Aug. 2 (pp. 401-407). IEEE.

4. **Choudhary P**, Goel N, Saini M. **A Seismic Sensor based Human Activity Recognition Framework using Deep Learning**. In Proceedings of 17^{th} IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS) 2021 Nov. 16 (pp. 1-8).

5. **Choudhary P**, Goel N, Saini M. **Event Detection and Localization for Sparsely Populated Outdoor Environment Using Seismic Sensor**. In Proceedings of IEEE 6^{th} International Conference on Multimedia Big Data (BigMM) 2020 Sep. 24 (pp. 346-350).

6. **Choudhary P**, Goel N, Saini M. **A multimedia based movie style model**. In Proceedings of IEEE International Conference on Multimedia & Expo Workshops (ICMEW) 2019 July 8 (pp. 72-77).

7. **Choudhary P**, Kant V, Dwivedi P. **A particle swarm optimization approach to multi criteria recommender system utilizing effective similarity measures**. In Proceedings of 9^{th} International Conference on Machine Learning and Computing 2017 Feb. 24 (pp. 81-85).

8. **Choudhary P**, Kant V, Dwivedi P. **Handling natural noise in multi criteria recommender system utilizing effective similarity measure and particle swarm optimization**. In Proceedings of Procedia computer science. 2017 Jan 1;115:853-62.

Skills

- **Machine Learning Frameworks:** TensorFlow, PyTorch, Scikit-Learn
- **Data Analysis and Visualization:** Pandas, NumPy, Matplotlib, Seaborn
- **Programming Languages:** C++, Python, MATLAB
- **Tools and Libraries:** VSCode, Docker, Hugging Face Transformers, OpenCV
- **Communication and Presentation:** Technical Writing, Conference Presentations

Languages

- **Hindi** [Native]
- **English** [Professional and working efficiency]

References

(1) Dr. Neeraj Goel (Assistant Professor)
Ph.D. Thesis Supervisor
Department of Computer Science & Engineering
Email: neeraj@iitrpr.ac.in
Indian Institute of Technology (IIT) Ropar

(2) Dr. Mukesh Saini (Assistant Professor)
Ph.D. Thesis Supervisor
Department of Computer Science & Engineering
Email: mukesh@iitrpr.ac.in
Indian Institute of Technology (IIT) Ropar

(3) Dr. Vibhor Kant (Assistant Professor)
M.Tech Thesis Supervisor
Department of Computer Science
Email: vibhor.kant@bhu.ac.in
Banaras Hindu University (BHU), Varanasi

(4) Dr. Pragya Dwivedi (Assistant Professor)
Department of Computer Science & Engineering
Email: pragyadwi86@mnnit.ac.in
Motilal Nehru National Institute of Technology
(MNNIT) Allahabad

(5) Dr. Claudio Bettini (Professor)
Department of Computer Science
Email: claudio.bettini@unimi.it
University of Milan, Italy

(6) Dr. Gabriele Civitarese (Assistant Professor)
Department of Computer Science
Email: gabriele.civitarese@unimi.it
University of Milan, Italy