Nilesh Verma

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PROFILE SUMMARY

I'm a data scientist with **2+ years** of experience and expertise in **machine learning, deep learning, computer vision, and natural language processing**. I've published **5 research papers**, registered a **patent**, and authored **two book**s. I've also developed **4 popular Python librarie**s, downloaded over **43,000+ times**. I'm proficient in Python and its associated frameworks like **Pandas, NumPy, Scikit-Learn, TensorFlow,** and **PyTorch**. I hold **gold medals** in both **MSc and BSc** in **Computer Science and Application** from Atal Bihari Vajpayee University, Bilaspur, India.

PROFESSIONAL EXPERIENCE

Data Scientist, *Amlgo Labs* May 2022 – present
Gurugram, India

- Working in the automotive industry to create end-to-end **AI analytical applications** on the **AWS Cloud**.
- Work on unstructured text data, **extracting information** (vehicle part names, categories, etc.) using **NLP predictive modelling** techniques and converting it into useful information.
- Responsible for developing, testing, and deploying **information extraction** and **social media analysis** pipelines.

Data Scientist, *Xceedance Inc* May 2021 – May 2022
Gurugram, India

- Developing **deep learning** and **machine learning** models for **natural language processing** and **computer vision tasks** such as BERT, YOLO, and others.
- Worked on **data extraction** from unstructured raw data such as emails, pdfs, images, and so on, using AI and data mining techniques.

NLP Intern, *Ganani.ai* Feb 2021 – May 2021
Banglore, India

- Worked on **speech/text** analytics and created **Natural Language Processing (NLP) models** for **regional languages** such as Hindi, Tamil, and Marathi.
- We built a **Conversation AI solution** for multiple languages.
- Used different frameworks to compare NLP models and deploy them as an API.

PUBLICATIONS & PATENT

- **Verma, N.** (2023). Python Adventures: A Beginner's Guide for Young Coders**. Amazon Kindle , Google Books** .
- Bhatia, L., Ghosh, D., Sahu, D. K., Sarangi, P. K., & **Verma, N.** (2022). A device for the production of ethanol from lignocellulosic biomass (German Registration No. 202022102746). The German Patent and Trademark Office. **(Patent Link)**
- Hota, H., Sharma, D. **Verma, N.** *"Lexicon-Based Sentiment Analysis Using Twitter Data: A Case of COVID-19 Outbreak in India and Abroad"*. Book title: Data Science for COVID-19 **(Elsevier)**
- Dharmendra Dangi; DheerajKumar Dixit; Amit Bhagat;RAJIT NAIR ; **Nilesh Verma** *"Analysing the sentiments by classifying the tweets based on COVID-19 using machine learning classifiers"*. Conference: TRIBES 2021 **(IEEE Xplore)**
- **Verma, N**. "Classification of Pima Indian Diabetes Dataset using Decision Tree Techniques." International Journal for Scientific Research and Development 7.12 (2020): 114-118.**(Published)**
- **Verma, N.** Kashyap, U. "Development of Depression Identification Decision Support System (DIDSS) Using Machine Learning Approach". Conference: ICIRSMT 2021 **(Link)**
- Hota, H., Sharma, D. **Verma, N**. "COVID-19: Machine Learning Methods Applied for Twitter Sentiment Analysis of Indians Before and After Lockdown and During Unlock". Journal: International Journal of Computing Science and Mathematics. **(Inderscience Publishers) (In Production)**
- Hota, H., Sharma, D. **Verma, N**. "Integration of Deep Learning Techniques for Sentiment and Emotion Analysis of Social Media Data". Journal: International Journal of Intelligent Systems Technologies and Applications. **(Inderscience Publishers) (In Production)**
- Hota, H., Sharma, D. **Verma, N**. "COVIS-Health: Deep Learning and Explainable AI based Expert System for Identification of Covid-19 Infection". **(Manuscript submitted)**

OPEN SOURCE CONTRIBUTION

Deep Image Search - AI-Based Image Search Engine, *Deep Image Search is an AI-based image search engine that includes deep transfer learning features Extraction and tree-based vectorized search technique.*

AutoWave - Automatic Audio Classification Library,
AutoWave is an complete audio automatic classification library with other features plottings,audio agumentaion, data loading etc.

Deep Text Search - AI Based Text Search & Recommendation System, *Deep Text Search is an AI-powered multilingual text search and recommendation engine with state-of-the-art transformer-based multilingual text embedding (50+ languages).*

SSEM (Semantic Similarity Based Evaluation Metrics), *SSEM is a semantic similarity-based evaluation library for natural language processing (NLP) text generation tasks. It supports various similarity metrics and evaluation levels, and is compatible with any Hugging Face pre-trained transformer model.*

LANGUAGES

English *(Fluent)* **Hindi** *(Native)*

SKILLS

Programming Language
Python, C++

Tools
Jupyter Notebook, Microsoft Visual Studio Code, Spyder, Anaconda IDE, Google Sheet, Excel, Web Scraping.

Visualization
Seaborn, Plotly

Data Science
Machine Learning, Deep Learning, Natural Language Processing, Computer Vision

Frameworks
Pandas, NumPy, Scikit-learn, Keras, BeautifulSoup, NLTK, Spacy, OpenCV, TensorFlow, Flask, RASA ChatBot, Pytorch, FastAI

Upskilling
MLOps, AWS Cloud, NoSQL(MongoDB), SQL

Research Tool
Turnitin, Grammarly, Mendeley, Quillbot

ACHIEVEMENTS

- Recognization of being placed **3rd** in **AppScript**, A 48-Hours Hackathon Conducted by **IEEE APSIT** on 6-7th Feb 2021.
- Secured **1st rank** in *The Great Indian Hiring Hackathon (Nov-20)* based on Foretelling the Retail Price Host by **MachineHack.**
- Achieved **1st rank** in *Data Sprint #16: Electronic Products Pricing Hackathon (December 2020)* hosted by **DPhi.**
- **1st rank** in **Robotics, Big Data, and Android Application Development** university-level workshop.
- Various state-level news covers the development of real-time covid-19 detection through CT-Scan software.
- Clear **NTA-NET exam** on the **first attempt** and eligible for assistant professor in all over India.

ACADEMIC ACTIVITIES

- Lifetime member of Indian Science Congress Association. **(Link)**
- Delivered a Seminar on Natural language processing on ***High-End Workshop on Natural Language Processing with Deep Learning: Application and Research Direction.*** (**Link**)
- Worked as a student volunteer in the online competition **CREATE-DOWN 2020:UTILIZE YOUR LOCKDOWN**, organized by Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur, India. (**Link**)
- Participated in a two weeks online Training Programme on **"Machine Learning for Computer Vision"** jointly organized by *Electronics and ICT Academies* from June 29 - July 8, 2020, under the ***"Scheme of financial assistance for setting up of Electronics and ICT Academies"*** of the ***Ministry of Electronics and Information Technology (MeitY), Government of India***. (**Link**)

ACADEMIC PROJECTS

COVIS-Health: Coronavirus Identification System for Health, Apr 2020
Deep Learning, xAI, Computer Vision, Web Development, Healthcare Domain
- It is a web-based **COVID-19 Infection Detection System** Model using **Chest CT-Scan images** to **classify positive and negative** cases with **99% accuracy**.
- It provides details about the infection area using **Explainable AI techniques.**

Human Depression Detection Using Actigraphy & Social Media Data, Mar 2020
Machine Learning, NLP, Deep Learning, Web Development, Psychology Domain
- It is a web-based tool or **wearable tool** that **detects depression in humans using Actigraphy data** in **1 hour of periods activities** and provides information about whether a **patient has depression or not**.
- Social media data, A **Text and Voice Search-Based Depression Detection Model** using social media data that **detect Depression** and also explains **which words have more impact on increasing depression**.

CERTIFICATES

Python 101 for Data Science
IBM Cognitiveclass (2020)

Machine Learning Specialization
WU (2020)

Problem Solving
HackerRank(2020)

Deep Learning Specialization
DeepLearning.ai (2020)

Data Science Math Skills
Duke University (2020)

EDUCATION

M.Sc. Computer Science & Application, *Atal Bihari Vajpayee Vishwavidyalaya* Jul 2018 – Jul 2020
- **88.95% mark (Gold Medalist)** Bilaspur, India

B.Sc. Computer Science and Application, *Bilaspur University* Jul 2014 – Jul 2017
- **82.54% marks (Gold Medalist)** Bilaspur, India