

# Nilesh Verma

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## PROFILE SUMMARY

**AI Solutions Architect with 5+ years of experience integrating end-to-end systems across Generative AI, ML, Computer Vision, NLP, and Data Streaming.** Proven track record in developing scalable automations and popular open-source tools (80k+ downloads). Completing a Ph.D. in AutoML at the University of Waikato, and **available to join immediately.**

## WORK EXPERIENCE

<b>Project Assistant</b> TAIAO, AI Institute, University of Waikato	Jan 2025 – Present Hamilton, New Zealand (Hybrid)
<ul style="list-style-type: none"><li>Contributing to <b>Weka Web</b> and <b>Weka Copilot</b> to make machine learning accessible to millions of users worldwide.</li><li>Building <b>end-to-end ML pipelines</b> and <b>helping companies integrate AI solutions</b>, including computer vision, LLM agents, and streaming ML.</li></ul>	
<b>Research Visitor</b> CNRS Labs, Sorbonne Université	Sep 2025 – Oct 2025 Paris, France
<ul style="list-style-type: none"><li>Conducted a short-term research visit focusing on <b>AutoML</b> and model selection for streaming and <b>real-world ML workloads</b>.</li><li>Worked on <b>Bayesian optimization methods</b> and built a hyperparameter optimization framework to tune models under resource constraints efficiently.</li></ul>	
<b>AI Consultant</b> Moana Digital Solutions (Part - Time) 	Nov 2023 – Aug 2024 Auckland, New Zealand
<ul style="list-style-type: none"><li>Developed AI <b>micro SaaS</b> products, including APIs for grammar checking, text completion, and web search bots, and built a comprehensive law AI Solution.</li><li>Worked on the <b>Advanced RAG</b> project utilizing <b>LLM</b>, ChatGPT APIs, and <b>LangChain</b>, and developed AI Coach, a complete audio bot solution for voice interaction with LLM.</li></ul>	
<b>Data Scientist</b> Amlgo Labs 	May 2022 – Jun 2023 Gurugram, India
<ul style="list-style-type: none"><li>Working in the automotive industry to create end-to-end <b>AI analytical applications</b> on the <b>AWS Cloud</b>.</li><li>Work on unstructured text data, <b>extracting information</b> (vehicle part names, categories, etc.) using <b>NLP predictive modelling</b> techniques and converting it into useful information.</li><li>Responsible for developing, testing, and deploying <b>information extraction</b> and <b>social media analysis</b> pipelines.</li></ul>	
<b>Data Scientist</b> Xceedance Inc 	May 2021 – May 2022 Gurugram, India
<ul style="list-style-type: none"><li>Developing <b>deep learning</b> and <b>machine learning</b> models for <b>natural language processing</b> and <b>computer vision tasks</b> such as BERT, YOLO, and others.</li><li>Worked on <b>data extraction</b> from unstructured raw data such as emails, pdfs, images, and so on, using AI and data mining techniques.</li></ul>	
<b>ML Developer</b> Ganani.ai 	May 2020 – May 2021 Banglore, India
<ul style="list-style-type: none"><li>Worked on <b>speech/text</b> analytics and created <b>Natural Language Processing (NLP) models</b> for <b>regional languages</b> such as Hindi, Tamil, and Marathi.</li><li>We built a <b>Conversation AI solution</b> for multiple languages.</li><li>Used different frameworks to compare NLP models and deploy them as an API.</li></ul>	

## RECENT PUBLICATIONS & PATENT

- Verma, N., Bifet, A., Pfahringer, B., & Bahri, M. **“Bayesian Stream Tuner: Dynamic Hyperparameter Optimization for Real-Time Data Streams.”** Proceedings of the 31st ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2025)
- Verma, N., Bifet, A., Pfahringer, B., & Bahri, M. **“Auto-Reg: A Dynamic AutoML Framework for Streaming Regression.”** Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2025), LNCS, pp. 245–256.
- Verma, N., Bifet, A., Pfahringer, B., & Bahri, M. **“ASML: A Scalable and Efficient AutoML Solution for Data Streams.”** AutoML 2024 – International Conference on Automated Machine Learning, Paris, France.
- Verma, N., & Hota, R. K. **“Design and Development of Machine Learning-Based Depression Identification Decision Support System.”** In *Machine Learning for Real World Applications*, pp. 61–78, 2024.
- Verma, N. **“Python Adventures: A Beginner’s Guide for Young Coders.”** Book, 2023 (Amazon Kindle & Google Books).
- Bhatia, L., Ghosh, D., Sahu, D. K., Sarangi, P. K., & Verma, N. **“A device for the production of ethanol from lignocellulosic biomass.”** DE Patent 202022102746, German Patent and Trademark Office, 2022. 

## 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 a complete audio automatic classification library with other features plottings, audio augmentation, 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.

## SKILLS

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### Generative AI & LLMs

OpenAI GPT, Claude, Gemini, LangChain, CrewAI, RAG systems, Prompt Engineering, Fine-Tuning, Agentic Workflows, Multimodal AI, Hugging Face Transformers, Multi-Agent Orchestration

### Frameworks

Pandas, NumPy, Scikit-learn, Keras, BeautifulSoup, NLTK, OpenCV, TensorFlow, PyTorch, FastAI, River, Weka, Seaborn, Plotly

### Cloud & DevOps

AWS, Azure, GCP, Docker, Kubernetes, Nginx, Git, MLOps, MLFlow

### Databases

PostgreSQL, MongoDB, Redis, SQL, Vector Database, Chroma, FAISS

### Programming Language

Python, JavaScript, C++, LaTeX

### Tools

Microsoft Visual Studio Code, Anaconda IDE, Google Colab, GitHub Copilot, AI Coding IDEs, n8n

### Web Development & APIs

React, FastAPI, Flask, Node.js, Tailwind CSS, Bootstrap, RESTful APIs, WebSockets, WebRTC, HTML5, CSS3, Twilio.

## ACHIEVEMENTS

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- Awarded the **Research and Enterprise Scholarship** by the **University of Waikato** for my **Ph.D. studies**.
- Recognition 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.
- Cleared **NTA-NET exam** on the **first attempt** and eligible for assistant professor in all over India.

## PROJECTS

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### AkoDesk – AI Voice Calling Platform

AI voice calling platform providing intelligent voice assistants for business communications, including inbound and outbound calling workflows.

### BhriguGPT – AI Spiritual Guidance Platform

AI-powered platform combining Vedic astrology and related systems with conversational AI for personalized spiritual guidance.

### OmniScholar – AI Research Productivity Platform

AI platform that streamlines academic workflows from literature discovery to publication with summarization, note-taking, and research agents.

### Weka.ai - Machine Learning for Everyone

Making machine learning and data science accessible to everyone. No complex setup, no steep learning curves, just powerful AI tools that work.

## CERTIFICATES

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### Python 101 for Data Science

IBM Cognitiveclass (2020)

### Deep Learning Specialization

DeepLearning.ai (2020)

### Machine Learning Specialization

WU (2020)

### Data Science Math Skills

Duke University (2020)

### Problem Solving

HackerRank(2020)

## EDUCATION

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### Doctor of Philosophy (PhD)

University of Waikato 

- Automated Machine learning (AutoML) for Data Streams

Jul 2023 – present  
Hamilton, New Zealand

### M.Sc. Computer Science & Application

Atal Bihari Vajpayee Vishwavidyalaya

- Gold Medalist

Jul 2018 – Jul 2020  
Bilaspur, India

### B.Sc. Computer Science and Application

Bilaspur University

- Gold Medalist

Jul 2014 – Jul 2017  
Bilaspur, India

## LANGUAGES

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### English

Fluent

### Hindi

Native