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Espoo, Finland
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Hans Tiwari

Data Scientist

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LinkedIn
Github

Data Scientist and Python Developer with 5+ years building data-driven solutions. Master's in Machine Learning and AI (Aalto University). Worked across Big Data, NLP, time series, data visualization, and model/algorithm optimization, including applied GenAI with LLMs. Focused on scalable, practical work that drives measurable business impact. Prefer simple, efficient solutions over complexity.

EDUCATION

Masters in Machine Learning, Artificial Intelligence and Data Science, *Aalto University* (current GPA: 4.34/5.0) 2021 — 2025
B.Tech in Electronics and Computer Engineering, *Vellore Institute of Technology* (CGPA: 9.01/10.00) 2016 — 2020

SKILLS

Programming & Tools Python, SQL, C/C++, AWS, Azure, MySQL, Power BI
ML & Data Science Machine Learning, NLP, Time Series Modeling, Geospatial Analytics, Data Visualization
Deep Learning & Generative AI PyTorch, Transformers, LangChain, LangGraph, FAISS, RAG, LLMs, Ollama

TECHNICAL EXPERIENCE

DATA SCIENTIST **Sept 2023 — Present**
SkenarioLabs Oy *Espoo, Finland*

- Built predictive models for real-estate valuation and market forecasting to support consistent pricing decisions.
- Integrated physical climate-risk factors into property/portfolio analytics to surface environmental exposure impacts.
- Developed GeoPandas geospatial pipelines (polygons, CRS, spatial joins) for scalable spatial features and mapping.
- Delivered Plotly/Dash dashboards for self-serve analysis and reporting.
- Supported delivery using Bitbucket, JIRA, and AWS for versioning, tracking, and cloud deployment.

RESEARCH ASSISTANT **Apr 2023 — Sept 2023**
Aalto University *Espoo, Finland*

- Conducted research for my thesis titled *Spatio-Temporal Video Grounding*.
- Explored various video datasets and developed methods for their analysis.
- Designed and implemented deep learning models using Transformer architectures in PyTorch.

DATA SCIENTIST **May 2022 — Mar 2023**
Pricen (Sniffie Software Oy) *Helsinki, Finland*

- Developed data visualizations in Python for generating automated reports.
- Built machine learning models to predict and suggest prices for revenue optimization.

SOFTWARE ENGINEER **May 2021 — Oct 2021**
Kaizen Consultants *San Francisco, USA*

- Conducted data science and statistical analysis.
- Developed models using Python, NumPy, and SciPy; studied global market dynamics.

PYTHON DEVELOPER INTERN → DATA SCIENTIST **Jan 2020 — Apr 2021**
Bajaj Finserv Health Limited *Pune, India*

- Claims + patient-journey analysis; business insights for stakeholders.
- What-if/sensitivity analysis; improved claims evaluation decisions.
- Speech recognition for voice prescriptions; reduced turnaround time.
- Power BI dashboards; faster reporting and visibility.
- Python + SQL projects; data extraction and automation.

SUMMER INTERN **May 2019 — Jun 2019**
Nokia Solutions and Networks Pvt. Ltd. *Chennai, India*

- Implemented a "Pick-To-Light" tool to assist workers in error-free equipment packing.
- Utilized the OpenCV Python library and a machine learning model for system development.
- Learned the fundamentals of Vuforia, a widely used platform for augmented reality development.

SUMMER RESEARCH INTERN **Jun 2018 — Jul 2018**
IIT Madras *Chennai, India*

- Gained exposure to fundamental concepts of deep learning and neural networks.
- Built and evaluated various classification models using MATLAB.
- Utilized CIFAR and MNIST datasets for image classification experiments.

PUBLICATIONS

- **Size-Modulated Deformable Attention in Spatio-Temporal Video Grounding Pipelines** (ICPR '24)
- **Spatio-Temporal Video Grounding of Human Actions for Human-in-the-Loop Artificial Intelligence** (CAIHU '24)
- **Design of Kids-Specific URL Classifier using Recurrent Convolutional Neural Network** (ICCIDS '19, Procedia Computer Science)
- **Bidirectional GRU-Based Attention Model for Kid-Specific URL Classification** (IGI Global '19)
- **Internet of Vehicles (IoV) Based Voice Controlled Autonomous Vehicle for Surveillance** (IJRTE '19)

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RELEVANT PROJECTS

MASTER'S THESIS: SPATIO-TEMPORAL VIDEO GROUNDING USING TRANSFORMERS

Sept 2023

- Conducted a Master's thesis on Spatio-Temporal Video Grounding (STVG), focusing on aligning video segments with natural language descriptions.
- Modified Transformer-based STVG models to better handle language ambiguity.
- Analyzed attention mechanisms, anchor queries, and object scale sensitivity.

DOMAIN-SPECIFIC KNOWLEDGE ASSISTANT (RAG)

2024

- Designed and implemented an end-to-end Retrieval-Augmented Generation (RAG) system for domain-specific question answering.
- Built document ingestion, chunking, and vector-based retrieval pipelines.
- Deployed the system as a production-style API with grounded LLM responses.

LLM-POWERED ANALYTICS ASSISTANT

2024

- Developed an LLM-driven analytics assistant for querying structured tabular data using natural language.
- Implemented a planning-execution framework combining LLM reasoning with deterministic Python analysis.
- Generated human-readable explanations of analytical results.

BERT-BASED QUESTION ANSWERING USING SQuAD

2023

- Implemented and fine-tuned BERT-based models for extractive question answering.
- Trained models on the SQuAD dataset for span prediction tasks.
- Evaluated performance using Exact Match (EM) and F1 metrics.

VIVIT FOR VIDEO ACTION RECOGNITION

Autumn 2022

- Evaluated Transformer-based ViViT architectures for video action recognition.
- Trained and tested models on ActivityNet and UCF101 datasets.
- Analyzed factorized encoders for effective spatio-temporal feature learning.