NATHAN DEZAN

Artificial Intelligence/Machine Learning Engineer

dezannathan@gmail.com • http://linkedin.com/in/nathan-dezan-002b121b2 • Três Lagoas, Mato Grosso do Sul, Brasil

Summary

AI and Machine Learning engineer with expertise in NLP, LLMs, and cloud computing. Contributed to projects involving customer service automation, digital onboarding, and intelligent software refactoring, achieving significant gains in efficiency and cost reduction. Strong experience in developing multichannel chatbots and robust AI platforms, with expertise in systems integration and process optimization. Aims to apply technical and scientific knowledge to drive innovation and business value.

Experience

Compass.uol

NLP Engineer — 05/2022 - Present

Development of intelligent natural language solutions using both classical models and modern approaches such as transformers and LLMs. Projects include classification, entity extraction, chatbots, and NLG, integrating AI technologies into scalable systems.

Compass.uol

Chatbot Developer — 11/2021 - 02/2022

Development and integration of customized chatbots for corporate clients, with a focus on scalable solutions connected to channels such as WhatsApp, Facebook, and webchat.

Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)

Scientific Researcher — 07/2021 - 11/2021

Conducted research on learning styles and teaching-learning strategies within a software development team.

Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)

Scientific Researcher — 08/2020 - 07/2021

Conducted research on ensemble techniques in single-class learning applied to automatic text classification.

Ministério Público do Estado de Mato Grosso do Sul

Administrative Assistant — 02/2019 - 12/2019

Administrative assistance and support for institutional processes.

Projects

Chatbot for managing resellers

Argentina

Development of a multilingual chatbot focused on managing resellers in Latin America, integrated with analytical dashboards. The project included customized NLP and country-specific business logic.

- Reduced human customer service workload.
- Increased efficiency in supporting resellers through automated, real-time responses.
- Provided strategic benefits with dashboards enabling faster and more accurate decision-making.
- Improved communication and engagement of resellers with the brand.
- Decreased operational errors in manual tracking processes.

Chatbot for managing partner companies

Brazil

Development of a chatbot for digital onboarding of new partner companies, featuring automated registration and intelligent validations. Integrated with operational dashboards that monitor the onboarding cycle in real time, ensuring accuracy and smoothness throughout the process.

- Reduced partner onboarding time.
- Improved data accuracy through automated validations.
- Operational efficiency gained via real-time integration tracking dashboards.
- Enhanced experience for newly onboarded partners.
- Minimized rework for registration and validation teams.

Projects

Sales chatbot via WhatsApp

Brazil

Implemented a conversational WhatsApp chatbot integrated with an analytics dashboard to monitor customer interactions and behavior. The project included automated customer support and data capture to enable continuous product and user journey optimization.

- Increased conversion rates through a new sales channel via WhatsApp.
- Reduced customer support costs with automated service in a direct-to-customer channel.
- Strategic value gained through behavioral data collection and product insights.
- Improved user experience with faster and more accurate interactions.
- Decreased friction in purchase and support journeys.

Similarity-based FAQ search

Brazil

Developed an intelligent FAQ system for the mobility sector using LLMs and semantic similarity search. The solution replaced traditional search tools by delivering more natural and accurate responses, with continuous learning based on real user interactions.

- Reduced user-submitted support tickets through more accurate self-service.
- Improved usability by enabling a more natural and efficient search experience.
- Achieved scalability through a robust system architecture.
- Continuously enhanced the model based on real user questions.

Similarity-based FAQ search

Brazil

Developed an intelligent FAQ system for the financial sector using LLMs and semantic similarity search. The solution replaced traditional search engines by delivering more natural and accurate responses, with continuous learning based on real user interactions.

- Reduced support costs by implementing automated semantic customer service.
- Improved self-service quality and customer NPS.
- Enhanced information accessibility through contextualized search.

AI ecosystem for mobile app refactoring

Brazil

Developed an AI-powered intelligent ecosystem that optimizes product design and agile task management for Product Owners, accelerates mobile app development and refactoring, and automates and streamlines testing with advanced QA support. The integrated tools enhance efficiency and speed across all stages of the software development lifecycle.

- Reduced development time through AI-driven automation of analysis and refactoring.
- Increased productivity with support tools based on LLMs and similarity search.
- Improved standardization and readability of legacy code.
- Enhanced software quality with automated testing and QA support.
- Minimized manual effort in repetitive stages of the refactoring cycle.

AI-powered integrated platform for software development lifecycle management

Brazil

Developed the AI Cockpit platform for intelligent orchestration of the entire software development lifecycle, integrating LLMs, transcription, and semantic analysis. The solution organizes tasks, standardizes processes, automates QA validations, and facilitates onboarding of new team members, driving increased productivity and reducing time and costs.

- Increased productivity through orchestration of LLMs, transcription, and semantic analysis.
- Reduced rework and enhanced standardization in software development.
- Achieved up to 30% savings in project delivery time.
- Improved QA processes with automated and intelligent validations.

Editorial platform for content management

Spain

Developed an intelligent editorial platform for automated management and creation of educational content, integrating generative AI for suggestions and standardized review. Targeted at schools, universities, and magazines, the solution accelerates the production of exercises and workbooks, enhancing editors' experience and optimizing content review processes.

- Scaled educational content production through automated suggestions.
- Reduced creation time for exercises and workbooks with generative AI support.
- Achieved editorial benefits via standardized and automated review processes.
- Enhanced editors' and reviewers' experience with automated correction and validation tools.
- Minimized rework for editors and reviewers.

Certifications

[AIF-C01] - AWS AI Practitioner

Skills

Languages: Python · Typescript · NodeJS · Rust · C

Skills

Frameworks:
Scikit-learn · TensorFlow · Keras · PyTorch · LangChain · spaCy · NLTK · FastAPI · Flask · Pandas · NumPy · SciPy · Matplotlib · Seaborn · Django · Express.js · Fastify · Langchain · Langflow · Flowise

Machine Learning Concepts:
Predictive Modeling · Model Optimization and Evaluation · Feature Engineering · Deep Learning · Natural Language Processing (NLP) · Large Language Models (LLMs) · Model Pipelines and Production · MLOps Integration · Model Interpretation · Speech to Text (STT) · Text to Speech (TTS) · Retrieval-Augmented Generation (RAG) · Similarity Search

Cloud: AWS · Azure

Others:
Docker · Kubernetes · MongoDB · PostgreSQL · MySQL · SQLite · Bucket S3 · Amazon RDS · Redis · Elasticsearch · DynamoDB · Amazon Redshift · N8N · Promptflow · Power BI · Tableau · API Rest · Whisper · HTTP

Education

Universidade Federal de Mato Grosso do Sul - UFMS — 01/2018 - 12/2024
Bachelor's Degree in Information Systems

Publications

Revista Contemporânea — 12/2023
A influência dos estilos de aprendizagem nos papéis de desenvolvimento de software no ambiente de ensino
Nathan Dezan e Franciene Duarte Gomes

The article investigates how different learning styles can influence students' performance in software development roles, such as programmer, analyst, or tester. A specific questionnaire is used to identify students' learning preferences and to discuss how teaching approaches can be adapted to these characteristics. The goal is to make the educational process more effective and aligned with students' individual needs.

Medium — 11/2022
Tempo é dinheiro: otimizando estruturas dataframe
Nathan Dezan

This study presents optimization techniques for handling large datasets using the Pandas library. By converting CSV files to Pickle format, removing null values, and assigning appropriate data types, significant reductions in loading time and memory usage were achieved—exceeding 80% in some cases. These practices proved especially effective in resource-constrained environments. The analysis highlights that simple adjustments to data structures can have a substantial impact on computational performance.

Universidade Federal de Mato Grosso do Sul (UFMS) — 09/2021
Estudo de técnicas ensemble no aprendizado baseado em uma única classe na classificação automática de textos
Nathan Dezan

The study evaluates the use of ensemble techniques applied to one-class learning (ABUC) for automatic text classification. Four ABUC algorithms were used: Local Outlier Factor (LOF), One-Class SVM (OCSVM), Isolation Forest, and Elliptic Envelope. The research compared the individual performance of these algorithms with their ensemble combinations across four text datasets. Results showed that the ensembles—particularly the combination of LOF and OCSVM—outperformed the best individual models by up to 20% in F1-score.