RONALDO NELIS DE ANDRADE

ML/AI ENGINEER

CONTACT

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MONTREAL, QC

CAREER OBJECTIVE

I am Ronaldo Andrade, a professional IT with over 15 years of experience in web development and AI engineering. I have successfully delivered various web development and AI projects using a wide range of technologies, such as .NET, Python, R, SQL, JavaScript, HTML, CSS, TensorFlow, Keras, SciPy, FastAPI, Django, Flask, LINQ, Jquery, Angular, Kubernetes, Docker, SCRUM, AWS Cloud, Microsoft Azure, Google Cloud, PostgreSQL/PostGIS, SQL Server, Oracle, MySQL, NoSQL, Jenkins, Git, Gitlab, GitHub, and Azure Pipelines.

EXPERIENCE

April 2023 – present
Founder and Chief Executive Officer
Leaftix – Montreal

I am the founder of Leaftix, a SaaS AI food production technology company that develops data-driven solutions for agriculture and agri-food industries. I have a strong background in cloud computing, web development, AI, and IoT, and I use various technologies such as Docker, Kubernetes, Pipelines, Microsoft Azure, and Python to create innovative and scalable products.

I have successfully designed and implemented the structure of cloud services, using Docker and Kubernetes to ensure the reliability and security of the applications. I have also analyzed and created the pilots of web projects and AI applications using Python as the programming language, applying deep learning and machine learning techniques for predictive analytics. Additionally, I have created IoT prototypes for weather monitoring and control of the environment, using sensors and actuators to collect and process data.

As the founder of Leaftix, I have also performed administrative tasks, such as managing the budget and negotiating contracts.

December 2022 – April 2023
MLOPS Engineer
CDPQ – Montreal

As a MLOps Engineer with extensive experience in cloud infrastructure development and management in a leading bank in Montreal, I specialize in utilizing cutting-edge technologies and industry best practices to build, deploy and maintain complex machine learning pipelines. I excel in leveraging Azure DevOps and AWS ecosystem including AWS Sagemaker, AWS EC2, AWS RDS, AWS CloudFormation, AWS Cost Explorer, and AWS CloudWatch to create and manage highly scalable and secure infrastructure for MLOps.

My skills and expertise in designing and implementing robust MLOps pipelines allow me to help organizations automate their machine learning workflows and improve the accuracy and efficiency of their models. With a keen eye for detail and a passion for delivering high-quality work, I collaborate with cross-functional teams to ensure seamless integration between different components of the MLOps infrastructure.

Whether it's building data pipelines, managing data warehouses, deploying and managing containerized applications, or monitoring system health, I'm adept at leveraging my knowledge of MLOps tools and technologies to create optimized and reliable infrastructure. My strong problem-solving skills, attention to detail, and ability to work under pressure have enabled me to deliver exceptional results on time and within budget.

Overall, I am a highly skilled MLOps Engineer who combines technical expertise with project management skills to design and implement scalable, secure, and high-performing infrastructure for machine learning operations.

Technologies:
- Amazon AWS;
- Microsoft Azure (CI/CD);
- Python 3.9;
- Kubernetes;
- Docker;
- Denodo;
- Databricks;
- Snowflake.

Mars 2021 - August 2021
Full Stack Developer
CAE - Montréal

In addition to my extensive experience in API, ETL, and Pipelines development, I had the unique opportunity to work with the largest aerospace company in Canada. As a key member of the team, I played a critical role in developing and maintaining solutions that supported multiple applications of VR flight simulators for both civil and military purposes.

I have been actively involved in all aspects of development, including architecture, analysis, testing, and implementation. By leveraging the latest tools and technologies, I have ensured that the solutions I develop meet the highest quality standards. I have also played a pivotal role in ensuring that our systems are continuously integrated and deployed using Microsoft Azure Pipelines, thereby ensuring smooth and seamless delivery.

Additionally, I am well-versed in using Black/Pylint for code quality and tests, and have gained experience in scripting Power Shell and Bash to automate tasks. This expertise has enabled me to optimize our systems for peak performance while minimizing downtime.

Technologies:
- Microsoft Azure (CI/CD);
- Python 3.9;
- Kubernetes;
- Docker;
- Platform: Windows 10, Ubuntu 21.

August 2021 – November 2021
DevOps Developer Python
Garda Security - Montreal

As a web developer at GARDA Security, I was responsible for developing and maintaining a web-based CRM (Customer Relationship Management) system that allows the company to manage its relationships with current and potential customers.

The CRM system is built using Python 3.9 as the programming language for web development. I use Flask as the web framework, which is a lightweight and flexible framework that provides tools and libraries for building web applications. I use PostgreSQL 13 as the database, which is a powerful and reliable relational database system.

I participate in the various aspects of development, such as architecture, which involves designing the structure and components of the system, analysis, which involves understanding the requirements and specifications of the system, testing, which involves verifying the functionality and performance of the system, and deployment, which involves delivering the system to the end-users.

I use AWS, which is a cloud computing platform that offers various services such as computing, storage, networking, and security, GIT, which is a version control system that tracks changes in the source code, Bitbucket, which is a web-based hosting service that integrates with GIT and provides features such as code review, issue tracking, and project management, and Jenkins, which is a continuous integration and continuous delivery tool that automates the building, testing, and deployment of the system.

I also use Black/Pylint for code quality and testing, which are tools that check the syntax, style, and errors of the code and enforce consistent coding standards.

I used Celery/Flower for managing scheduled tasks, which are tools that allow me to execute asynchronous tasks in the background and monitor their progress and results.

Technologies:
- Python 3.9;
- AWS (CI/CD);
- PostgreSQL 13;
- Celery/Flower;
- Platform: Windows 10.

Mars 2021 - August 2021
DevOps Tech Lead
Curateur Public du Québec – Montreal

As a Tech Lead at Curateur Public du Quebec, I participate in the different aspects of development of the software applications that support the mission and vision of the organization. The Curateur Public du Quebec is a public body that protects the rights and interests of incapacitated persons, minors, and unclaimed property owners. The software applications that I work on are designed to facilitate the management of these cases and provide efficient and secure services to the public.

I carry out preliminary and functional analysis to understand the requirements and specifications of the software applications. I write the appropriate documentation to ensure the continuity and maintainability of the applications. I also participate in the improvement of software development practices within the team, such as DevOps, which is a set of practices that combines software development and IT operations to deliver software faster and more reliably.

I maintain and ensure the evolution and respect of the solution architecture in alignment with best practices. The solution architecture is the high-level design of the software applications that defines how they meet the business and technical objectives. I help the team adopt modern cloud computing development standards, including architecture, DevOps, and unit testing. Cloud computing is the delivery of computing services over the internet, such as servers, storage, databases, networking, software, analytics, and intelligence.

Unit testing is a type of software testing that verifies the functionality of individual units or components of the software.

Technologies used:
- Microservices with .Net Core C# 3.1;
- Kubernetes 1.X;
- Docker;
- GitLab (CI/CD);
- Postgres SQL;
- Kong Api Getaway;
- Kuma Mesh.

June 2020 - March 2021
Analyst Developer
Desjardins Quebec

As a developer at Desjardins, I was involved in giving support on the development of the IBM Lotus applications that were used by the bank to manage its operations and services. IBM Lotus is a suite of software products that includes Lotus Notes, Lotus Domino, Lotus Sametime, Lotus Quick, and Lotus Symphony. These products provide features such as email, calendar, collaboration, document management, web conferencing, and office productivity.

My role was to cover problems of the cybersecurity related to the IBM Lotus applications. Cybersecurity is the practice of protecting systems, networks, and programs from digital attacks that aim to access, change, or destroy sensitive information, extort money from users, or interrupt normal business processes. Some of the problems that I encountered and solved were:

Unauthorized access: This problem occurs when someone gains access to the IBM Lotus applications without proper authorization or permission. This can compromise the confidentiality, integrity, and availability of the data and services. To prevent this problem, I implemented security measures such as encryption, authentication, authorization, and auditing. Encryption is the process of transforming data into an unreadable format that can only be decrypted by authorized parties. Authentication is the process of verifying the identity of a user or device. Authorization is the process of granting or denying access rights to a user or device. Auditing is the process of recording and reviewing the activities and events that occur on the IBM Lotus applications.

Data breach: This problem occurs when sensitive or confidential data is leaked or exposed to unauthorized parties. Data breach can result in financial loss, reputational damage, legal liability, or regulatory penalties for the bank and its customers. To prevent this problem, I followed the data protection policies and procedures of Desjardins and ensured that the IBM Lotus applications complied with them. I also used data masking techniques to hide or replace sensitive data with fictitious data when transferring or storing it outside the IBM Lotus applications.

Technologies:
- IBM Lotus.

January 2019 – June 2020
Analyst Developer
Ministry of Justice of Quebec

As a developer at the Ministry of Justice of Quebec, I was involved in developing and maintaining the internal systems of the ministry. The Ministry of Justice of Quebec is the department of the government of Quebec that is responsible for the administration of justice, public security, access to information, and consumer protection in the province. The internal systems that I worked on were designed to support the functions and operations of the ministry and its various branches and agencies.

My role was to give support for ancient features and create new ones for the internal systems. Ancient features are the features that were developed using older technologies or methodologies and are no longer compatible or efficient with the current standards or requirements. New features are the features that were developed using newer technologies or methodologies and are more compatible or efficient with the current standards or requirements. Some of the tasks that I performed were:

Supporting ancient features: This task involved fixing bugs, resolving issues, optimizing performance, and ensuring security of the ancient features. Bugs are errors or defects in the code that cause unexpected or incorrect results. Issues are problems or difficulties that affect the functionality or usability of the features. Performance is the measure of how fast or responsive the features are. Security is the measure of how well the features protect the data and services from unauthorized access or attacks. To perform this task, I used to debug tools, testing tools, monitoring tools, and security tools to identify and resolve the bugs, issues, performance problems, and security risks of the ancient features.

Creating new features: This task involved designing, developing, testing, and deploying new features for the internal systems. Designing is the process of planning and defining the structure and components of the features. Developing is the process of writing and implementing the code that executes the features. Testing is the process of verifying and validating the functionality and quality of the features.

Technologies:
- ASP.NET 5;
- C#;
- VB.NET;
- SQL Server;
- Microsoft TFS.

January 2018 – December 2018
Data Scientist
Agronow Agritech - Brazil

As a Data Scientist at Agritech Agronow, I was involved in developing a web system based on satellite images to estimate agricultural production. Agritech Agronow is a company that provides solutions for the agribusiness sector using remote sensing and data analysis. The web system that I worked on was designed to provide accurate and timely information on the current and future agricultural production of various crops and regions.

My main role was to develop the data classification algorithms using Python, SciPy, and NumPy. Data classification is the process of assigning labels or categories to data based on their features or patterns. I used satellite imagery from Landsat 8 and Sentinel 2 as the main source of data for estimating agricultural production. Landsat 8 and Sentinel 2 are Earth observation satellites that capture high-resolution images of the land surface in various spectral bands. These images can be used to monitor vegetation health, crop growth, soil moisture, land use, and land cover.

I used Python as the programming language for developing the data classification algorithms. I used SciPy as the framework for implementing the data classification algorithms. I used NumPy as the library for numerical computation and array manipulation.

I used two types of data classification algorithms: supervised and unsupervised. Supervised classification is a type of machine learning that assigns labels to data based on predefined classes or categories, such as crop type, crop stage, or crop yield. Unsupervised classification is a type of machine learning that groups data based on their similarities or patterns, such as spectral signatures, spatial features, or temporal trends.

For supervised classification, I used algorithms such as k-nearest neighbors (KNN), support vector machines (SVM). These algorithms learn from labeled training data and then predict labels for new data based on their features or distances.
For unsupervised classification, I used algorithms such as k-means clustering (KMC). This algorithm discover clusters or components of data based on their variance or independence.

Technologies:
- Python;
- Pandas;
- Django;
- SciPy;
- NumPy;
- Ipython Notebook;

October 2015 – Jan 2018

Analyst Developer

INPE – Instituto Brasileiro de Pesquisas Espaciais - Brazil

As a GIS Developer at the Institute of Research Aerospatial in Brazil pas team member of the program of investments in actions of prevention, monitoring and combating deforestation, and promoting conservation and sustainable use of the Amazon Legal, I was involved in developing a web-based fire monitoring system for Brazilian forests. INPE is a public institution that conducts research and development in the fields of aerospace science and technology. The web-based fire monitoring system that I worked on was designed to provide timely and accurate information on the location, extent, and severity of forest fires in AMAZONIA.

I used satellite imagery from Landsat 8 as the main source of data for detecting and mapping forest fires using these images of the land surface in various spectral bands. These images can be used to monitor vegetation health, land use, land cover, and fire activity.

I used Python 2.7 as the programming language for developing the web-based fire monitoring system using many libraries.

I used Django 1.9 as the web framework for developing the web-based fire monitoring system to provide features such as object-relational mapping, template engine, authentication system, URL routing, and admin interface.

I used PostgresSQL (PostGIS) as the database for storing and retrieving spatial data and PostGIS an extension of PostgresSQL that adds support for geographic objects and spatial functions.

I used Python Pandas, NumPy, and Ipython Notebook as the tools for data manipulation and analysis working with tabular and multidimensional data.

I used Ipython Notebook to create and share documents that contain live code, equations, visualizations, and narrative text.

I used R and RStudio as the tools for statistical computing and graphics such as linear and nonlinear modeling, classical statistical tests, time-series analysis, classification, clustering, and more.

I used GeoServer and MapServer as the tools for publishing and serving spatial data over the web using multiple files such as shapefiles, databases, raster files and KML.

EDUCATION

Technical Specialization In Artificial Intelligenc In IT Candidate
Collège de Bois-de-Boulogne, Montreal, QC

January 2005 - August 2007
College Degree In web development
IBTA – Instituto Brasileiro de Tecnologia, Paulo.

RESEARCH AND PUBLICATIONS

Andrade, Ronaldo Nelis de (2017), Classificação Semiautomática de Áreas Queimadas com o uso de Redes Neurais http://bitly.ws/vqUq

This paper presents an approach to improve the semi-automatic detection of burned areas through the use of neural networks. The approach is validated over a selected study area in the Brazilian Cerrado against reference data derived from data classified by experts. Methods are still being developed and improved, and initial results corroborate the validity of the approach, which will be extended to other study areas.

SKILLS

- Languages: C# (8 years), Python (6 years), R (1 year), SQL (10 years), JavaScript (10 years), HTML (10 years), CSS (6 years);
- Frameworks: .NET CORE (2 years), MVC (8 years), TensorFlow (2 years), Keras (2 years), SciPy (3 years), FastAPI (2 years), Django (3 years)
- Flask (2 years), LINQ (3 years), Jquery (3 years), Angular (1 year), Kubernetes (3 years), Docker (4 years), SCRUM (4 years);
- Cloud computing: AWS (4 years), Microsoft Azure (4 years), Google Cloud (1 year).
- Database: PostgreSQL/PostGIS (6 years), SQL Server (8 years), Oracle (2 years), MySQL (4 years), NoSQL (6 years);
- CI/CD: Jenkins (1 year), Git (4 years), Azure Pipelines (2 years).
- Platform: Windows, Ubuntu.
- GIS / Geodata, Leaflet.

LANGUAGES

- **Portuguese: Native Proficiency**
- **English: Full Professional Proficiency**
- **French: Full Professional Proficiency**
- **Spanish: Basic Proficiency**

EXTRAS

- **Site: https://ronaldonelisdeandrade.com/**
- **LinkedIn: RONALDO ANDRADE | LinkedIn**
- **Blog: LeaftixBlogTech**