

DATA SPECIALIST

TECH STRATEGIST

DYNAMIC LEADER

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SUMMARY

As an accomplished professional with over two decades of experience in data management, platform development, and technological innovation, I bring a versatile and deep knowledge spanning technical, economic, and institutional domains. Currently serving as the Senior Data Collection Platform Owner at the International Monetary Fund (IMF), I have led numerous initiatives that have driven significant advancements in data collection processes, system reliability, and security. My expertise encompasses a wide array of skills, including cloud computing, DevOps practices, artificial intelligence, and cybersecurity.

In addition to my technical expertise, I have a strong track record in team leadership and project management, having successfully navigated and optimized processes across various organizations. Among my accomplishments, I have pioneered blockchain research and deployed advanced mobile applications at the Central Bank of Brazil, as well as collaborated on prominent projects such as the COVID-19 Policy Tracker at the IMF. I also assist my section chief with budgeting, planning, and communications, often standing in for him when he's away and contributing to recruitment and training of new staff, reflecting my leadership and teamwork capabilities.

I hold certifications in Microsoft Azure, project management, and cybersecurity, highlighting my commitment to continuous learning and professional development. With strong communication skills and a collaborative approach, I am adept at working across departments and hierarchies to achieve strategic goals. My current pursuit of a PhD in Economics further enriches my ability to empathize with diverse stakeholder needs and align technological solutions with organizational objectives. I am passionate about leveraging advanced technologies to create value, enhance data-driven decision-making, and drive organizational growth in dynamic environments.

WORK EXPERIENCE

SENIOR DATA COLLECTION PLATFORM OWNER since 2019

International Monetary Fund
Washington-DC

In my role as Senior Data Collection Platform Owner at the International Monetary Fund, I have seamlessly integrated my academic background in economics with the practical challenges of data management. This unique blend enables me to empathize with our business partners and assist them in capturing both structured and unstructured data from member countries. My innovative and proactive problem-solving approach drives my team to not just achieve, but continually redefine our goals. We focus on creating significant value through advanced data collection methods and data transformation, effectively bridging the gap between raw data and actionable economic insights.

2024 • At the beginning of the year, I earned two certifications in Azure Operations with the aim of refreshing and advancing my skills for more effective navigation within the Fund's IT environment. • I led a team in a six-month project to enhance the processes around Annual Observation Reports, a complex initiative involving three different teams producing reports for each country. In this agile project, we reverse-engineered business rules, improved several features based on user feedback, and optimized the overall process. This deeply collaborative effort, involving close interaction with business partners, allowed us to rapidly detect and address significant issues. As a result, users reported a noticeable reduction in problems and improved report outputs. • Additionally, I represented the division in developing the Business Technology Strategy (BTS), working closely with the Citizen Dev pillar.

WORK EXPERIENCE (continued)

2023 • I spearheaded several key initiatives that significantly enhanced our data collection and management systems. By addressing critical issues at the data collection operations' input site, I drove valuable process enhancements and optimizations. • One major achievement was the successful integration of ICS with the Fund's new data management platform, iData. This required comprehensive adaptations to fully leverage SDMX-compliant data services and enhanced security through migration to a cloud-based authentication system. • Additionally, I coordinated the seamless migration of the SDMX Central website to a new provider, facilitating smooth transitions and effective collaboration across various teams. • My role also extended to contributing to the AIDA project, where I developed the user interface utilizing Language Models provisioned in Azure AI services. This involved experimenting with large language model (LLM) capabilities to achieve efficient document summarization.

2022 • My efforts were characterized by a keen focus on enhancing system reliability and security. I led a comprehensive forensic analysis of our operational logs to identify and resolve performance issues, thereby ensuring the robustness and resilience of our systems. • Additionally, I spearheaded the upgrade of the ICS authentication system, which was a critical step towards enhancing our platform's security and user trust. This initiative not only resolved immediate technical challenges but also laid a solid foundation for more secure and efficient operations in the future.

2021 • I successfully coordinated the MSP transition, a task that demanded exceptional teamwork and discipline. This period saw a challenging phase where service quality initially declined, sparking a critical situation. My response involved prioritizing tasks effectively, expanding knowledge transfer, and negotiating for new resources. A significant strategy I implemented was the institution of daily meetings with the MSP team, which became instrumental in detecting problems, anticipating issues, and prioritizing tickets efficiently. This approach not only stabilized the service quality but also strengthened our team's resilience and adaptability.

2020 • Amidst the challenges of the COVID-19 pandemic, I led the support for internal country desk surveys, crucial for feeding data into SPR's COVID-19 situation dashboard. This project was rapidly executed and put into production within weeks, thanks to the prompt reutilization of existing data collection components. • Additionally, I took a hands-on approach in coding a prototype web application to aid MCM experts in encoding the CBLD legislation, employing cloud technologies and open-source components. This application not only served its immediate purpose but also acted as a testbed for an artificial intelligence recommendation system, trained on the legacy CBLD database.

2019 • My first year at the IMF was marked by innovative breakthroughs in user authentication and survey implementation. I introduced a novel mechanism for the CBLD survey that utilized password-less tokens, significantly enhancing user experience while reducing operational costs. • Additionally, I played a pivotal role in implementing the ESI/CPIS survey, a complex project due to its unique features that were initially deemed incompatible with our Economic Data Management System. Successfully integrating this survey enabled the Fund to efficiently collect and cross-reference security issuer information across over twenty countries, demonstrating our capacity to overcome technical challenges and expand our data collection capabilities.

ANALYST 2008–2019 Central Bank of Brazil Brasília–DF (Brazil)

During my tenure at the Central Bank of Brazil, I gained extensive experience in various IT teams. I began as a support member for minor enhancements of the Bank's website, which provided me with an opportunity to learn about the Bank's technological landscape. Subsequently, I led a team that provided development support across multiple departments, turning it into an innovation workshop. For more than three years, I directed projects for mobile apps, utilizing advanced technologies such as geotagging and AR. This experience required me to work closely with management, vendors, developers, and consultants to foster inter-departmental collaboration. After completing a Master's in Economics, I led a

WORK EXPERIENCE (continued)

research team that published a well-received blockchain research paper and a secure data exchange prototype within 18 months. These projects taught me valuable skills such as team management, collaboration, and innovation.

2017 • In my latest role, I was part of a disruptive tech/innovation research team where we applied blockchain technology (DLT) in corporate use cases and built interfaces leveraging cognitive computing. Our team developed proofs of concept for a real-time gross payment system (SALT) and an information exchange platform (PIER) that connected financial regulators through blockchain, metadata management, and APIs. • Additionally, we created a chatbot designed to allow the public to view their personal information and initiated a project to automate the IT service desk using machine learning and chatbots. • In this role, I was also a member of the management board for the Laboratory for Financial and Technological Innovation (LIFT), where I held managing, overseeing, and advisory responsibilities.

2011 • I led teams in developing three mobile apps: Calculadora do Cidadao, Cambio Legal, and Dinheiro Brasileiro. These projects featured advanced functionalities such as legacy system interfaces, geotagged data, and augmented reality (AR). • I also negotiated and specified data collection procedures for Cambio Legal and designed XML/DTD specifications. Our primary goal was to gain insights from these projects to inform policies on mobile app provision, usage, and development. • Over three years, our team developed a total of five iOS/Android apps, incorporating advanced features like REST APIs, AR, and geotagging, which were downloaded by millions of Brazilian users. • Furthermore, we established a robust framework for inter-departmental collaboration, effectively connecting product owners, operations, business, and communications departments.

2009 • My first leadership role at the Central Bank of Brazil involved leading a team dedicated to facilitating the adoption of the .Net platform, providing developer support, and ensuring seamless integration with corporate Java platforms. • Key responsibilities included delivering lectures on .Net, troubleshooting issues ranging from syntax errors to optimization and threading problems, and improving both software architecture and development infrastructure. I also organized annual developer forums to foster knowledge sharing and collaboration. • My team played a pivotal role in modernizing .Net development at the Bank by fully implementing the .Net Application Lifecycle Management (ALM) system. This included designing comprehensive procedures and policies, and enabling one-click deployment features for developers, covering aspects such as package management and database patching. • We ensured all corporate development projects were meticulously catalogued in proper repositories, thereby enhancing traceability and efficiency.

RESEARCH ASSISTANT 2015-2017 Network Perception Champaign-IL

Throughout my Master's studies in Champaign-IL, I had the opportunity to work as a Research Assistant at Network Perception, a cybersecurity company. This experience not only allowed me to maintain and refine my programming skills while studying economics, but also provided a valuable opportunity to broaden my expertise in both frontend and backend programming. By tackling diverse challenges that were distinct from my previous experiences in the IT department of the Central Bank, I was able to further develop my skills in data analysis, data pipeline optimization and data visualization, essential for effectively handling large and complex datasets in various contexts.

2015 • I contributed to NPLive, a platform for network topology visualization and auditing, by coding both frontend (using Javascript, D3, and AngularJS) and backend (Python, Tornado). On the frontend, I improved the application by replacing jQuery code with AngularJS and writing code and layout for various use cases. • On the backend, I dockerized the application and collaborated in automating the deployment of the cloud version on Amazon EC2. I also optimized process communication and fixed threading issues, and added NoSQL storage capabilities. • Lastly, I

WORK EXPERIENCE (continued)

designed, implemented and deployed a secure cloud architecture for hosting NPLive, with proper DevSecOps controls and continuous integration.

SENIOR DEVELOPER 2007–2008

Instituto Atlântico
Fortaleza–CE (Brazil)

While on the waiting list to join the Central Bank of Brazil, I worked as a software developer at a local IT company in 2007. I specialized in C/C++ and Java platforms, and contributed to several projects.

2007 I developed a platform for high performance server modules for image processing and interfacing with messaging protocols, part of a HP sponsored project of a platform that would allow users to easily process images by sending messages to web servers. My next project at IA was the development of a tool for benchmarking network performance using handheld devices. Lastly, I was allocated to LG's Brazilian mobile unit, and assisted with testing and technical documentation of LG cell phone new product lines.

SENIOR DEVELOPER 2000–2006

Fujitec
Fortaleza–CE (Brazil)

At Fujitec, I utilized advanced cryptography and developed Smartcards while integrating Bluetooth and 802.11 technologies. My strong relationship with the team earned me the first leading role due to my ability to communicate effectively with difficult users. I was also appointed lead technical writer for all documentation. My communication and technical skills earned me a lead role in the company's flagship project integrating smartcard hardware and software in Honolulu. I eventually left Fujitec for an opportunity at the Central Bank of Brazil.

2003 Lead developer and technical liaison for Fujitec to provide advising services to the city of Honolulu on a pilot program for using smartcards on the bus transportation system. I was assigned firmware, and integration software. I also wrote software to detect equipment present in the wi-fi network and proceed with automatic data collection from detected hardware.

2002 Lead technical consultant for Fujitec (through Booz-Allen Hamilton) to provide advising services to Denver Regional Transportation District on a pilot program for using smartcards to enable an integrated public transportation system. I developed interfaces for PDAs to remote control GPS transponders and smartcard readers, integrated resulting data streams in RTD's databases, and provided onsite firmware and software support.

2001 Wrote clearing house software component that, by authenticating cryptographic keys split in several smartcards, would produce unique keys to issue smartcard credits in a payment system. Assistant consultant for Fujitec to provide onsite advising services to TSF, an Italian company, in designing and implementing smartcard systems for public transportation at Varese and Pavia (Italy).

CERTIFICATIONS

MICROSOFT **2024**

Microsoft Certified: Azure Fundamentals
Microsoft Certified: Azure Administrator Associate

ISACA **2023**

Certified Information Security Manager (CISM)
(exam passed, experience under evaluation)

LINKEDIN LEARNING **2023**

Cybersecurity Foundations: Security Architecture
Learning Security Frameworks
Learning Security Metrics
IT Security Foundations: Core Concepts
IT and Cybersecurity Risk Management Essential Training
Prepare for the Certified Information Security Manager (CISM) Certification Exam
(2022)

DUKE CE **2020**

Ignite Leadership Program (through IMF)

COURSERA/ WESLEYAN UNIVERSITY **2018**

Creative Writing: The Craft of Style
Creative Writing: The Craft of Character
Creative Writing: The Craft of Setting and Description
Creative Writing: The Craft of Plot

COURSERA/ UNIVERSITY OF WASHINGTON **2017**

Machine Learning: Specialization Machine Learning
Foundations Machine Learning: Regression
Machine Learning: Classification
Machine Learning: Clustering & Retrieval

COURSERA/ STANFORD UNIVERSITY **2017**

Machine Learning

HARVARD BUSINESS SCHOOL (ONLINE) **2014**

Passport for Leadership (through Central Bank of Brazil)

NOBLE DESKTOP (NYC) **2014**

Introduction to Graphic Design

PROJECT MANAGEMENT INSTITUTE (PMI) **2013-2016**

Project Manager Professional

SCRUM.ORG **2010**

Professional Scrum Master

EDUCATION

PHD CANDIDATE 2022

Economics
George Mason University
Fairfax-VA

MASTER OF SCIENCE 2017

Economics (MS with a Specialization in Policy Economics)
with concentration in Public Sector Economics and Industrial Organization
University of Illinois at Urbana-Champaign
Urbana-IL

ASSOCIATE DEGREE 2002

Specialization in Computer Networks and
Distributed Systems
Universidade Federal do Ceará
Fortaleza-CE-Brazil

BACHELOR'S DEGREE 1997

Computer Science
Universidade Federal do Ceará
Fortaleza-CE-Brazil

SKILLS

PROGRAMMING LANGUAGES

Python, C#, C, C++, Java, Javascript, Objective-C, Octave (MATLAB), R, STATA,
HTML, CSS

WEB DEVELOPMENT

AngularJS, WebAPI, ASP.Net, Graphic design (including HTML, CSS)

DATABASES

SQL (MS-SQL Server, MySQL, PostgreSQL, Oracle), MongoDB, CouchDB, Redis

CLOUD COMPUTING

Cloud computing (AWS, Microsoft Azure), Planning and deploying cloud
infrastructure, Cost Management, Containerization and Orchestration, APIs and
Integration

DEVOPS

Docker, GIT, Continuous integration, DevSecOps, Kubernetes, Monitoring and
Logging

SYSTEMS AND INFRASTRUCTURE

Windows/Linux server administration, IT Operations, REST API design, JSON and
XML design, Managed metadata, Data exchange, Real time systems, Large scale
systems, Integration with legacy platforms, Search platforms, Firmware
development, IoT

CYBERSECURITY

Certified Information Security Manager (CISM), Network Security, Compliance,
Incident Response, Cryptography, Disaster Recovery

DATA SCIENCE AND MACHINE LEARNING

Data analytics, Statistical modeling, Data mining, Natural language processing, Big
Data tools (Hadoop), Data science platforms (Databricks), Modeling tools (STATA,
R, Matlab), Geospatial data analysis, Large Language Models, Langchain

PROJECT MANAGEMENT

Microsoft Office, Project management, Agile methodologies, IT processes, Scrum
Master, Power Automate, Power BI

CREATIVE

LATEX, Adobe Photoshop, Adobe Premiere, Adobe Illustrator

LANGUAGES

Native Portuguese, Fluent English, Work level proficiency Spanish

PRESENTATIONS AND LECTURES

- 2021** SDMX in a Big Data Architecture (Virtual) with Ryoichi Yamakoshi
10th Expert Group Meeting on Statistical Data and Metadata eXchange
- SDMX-based Automatic Data Collection Platform with Khaled AlAjmi
10th Expert Group Meeting on Statistical Data and Metadata eXchange
- 2018** In The Path of New Horizons to the Development of Solutions for Financial Services
Campus Party Brasília, Brasília-DF
- Market use-cases for blockchains (24 hours classroom for associate degree coursework)
IESB, Brasília-DF
- Distributed Ledger Research in the Central Bank of Brazil
HDI International Conference & Expo, Sao Paulo-SP
- Distributed Ledger Research in the Central Bank of Brazil
Brazil Cyber Defense, Brasília-DF
- Distributed Ledger Research in the Central Bank of Brazil
Brazil Cyber Defense, Brasília-DF
- 2017** Pier – Data Exchange Platform for the Financial System Regulators
Central Bank of Brazil Developers' Annual Meetup, Brasília-DF
- Distributed Ledger Research in the Central Bank of Brazil
IMF Headquarters, Washington-DC
- Distributed Ledger Research in the Central Bank of Brazil
Ripple Central Bank Summit, New York-NY
- 2012** Mobile device software development platforms
(iOS vs Android vs HTML+JS)
Central Bank of Brazil Developers' Annual Meetup, Brasília-DF
- Calculadora do Cidadão
*IV Financial Inclusion Forum of
the Central Bank of Brazil, Porto Alegre-RS*
- The Central Bank's .Net Architecture (Keynote)
IV Central Bank of Brazil Annual Meetup for Developers outside the IT department, Brasília-DF
- Developing with C# and Asp.Net (40 hours hands on training)
Corporate program at the Central Bank of Brazil, Brasília-DF
- 2011** The new corporate .Net architecture using NUGET (Keynote)
III Central Bank of Brazil Annual Meetup for Developers outside the IT department, Brasília-DF
- Advanced C# (40 hours hands on training)
Corporate program at the Central Bank of Brazil, Brasília-DF
- Developing with C# and Asp.Net (40 hours hands on training)
Corporate program at the Central Bank of Brazil, Brasília-DF
- 2010** A meta-presentation (Asp.Net MVC patterns)
II Central Bank of Brazil Annual Meetup for Developers outside the IT department, Brasília-DF

PUBLICATIONS

Khaled AlAjmi, Jose Deodoro, Ashraf Khan, Kei Moriya. Predicting the Law: Artificial Intelligence Findings from the IMF's Central Bank Legislation Database. Working Paper No. 2023/241. November 17, 2023.

<https://www.imf.org/en/Publications/WP/Issues/2023/11/18/Predicting-the-Law-Artificial-Intelligence-Findings-from-the-IMFs-Central-Bank-Legislation-541619>

Itai Agur, Jose Deodoro, Xavier Lavayssière, Soledad Martinez Peria, Damiano Sandri, Hervé Tourpe and Germán Villegas Bauer. "Digital Currencies And Energy Consumption", IMF Fintech Notes, no. 2022/006 (2022).

<https://www.imf.org/en/Publications/fintech-notes/Issues/2022/06/07/Digital-Currencies-and-Energy-Consumption-517866>

Deodoro, Jose, Michael Gorbanyov, Majid Malaika, and Tahsin Saadi Sedik. "Quantum Computing's Possibilities and Perils", IMF F&D Magazine, Volume 58, Number 4, December 2021.

<https://www.imf.org/en/Publications/fandd/issues/2021/09/quantum-computings-possibilitiesand-perils-deodoro>

Boukherouaa, E.B., AlAjmi, K., Deodoro, J., Farias, A. and Ravikumar, R., 2021. Powering the Digital Economy: Opportunities and Risks of Artificial Intelligence in Finance. Departmental Papers, 2021(024).

<https://www.elibrary.imf.org/view/journals/087/2021/024/article-A001-en.xml>

Deodoro, Jose, Michael Gorbanyov, Majid Malaika, and Tahsin Saadi Sedik. "Quantum Computing and the Financial System: Spooky Action at a Distance?." IMF Working Papers 2021, no. 071 (2021).

<https://www.imf.org/en/Publications/WP/Issues/2021/03/12/Quantum-Computing-and-the-Financial-System-Spooky-Action-at-a-Distance-50159>

Aldenio Burgos, Jose de Oliveira Filho, Marcus Suares and Rafael Almeida. Distributed ledger technical research in Central Bank of Brazil. Self-published paper, 2017.

https://www.bcb.gov.br/htms/public/microcredito/Distributed_ledger_technical_research_in_Central_Bank_of_Brazil.pdf

Emily Hastings, Richa Sehgal, Jefferson Fu and Jose de Oliveira Filho. Order doesn't matter. Self-published paper, 2017. v

<https://www.deodoro.net/papers/>

Jose de Oliveira Filho. Taxation of Digital Assets. Self-published paper, 2016.

<https://www.deodoro.net/papers/>

Jose de Oliveira Filho. Blockchains, a report. Self-published paper, 2016.

<https://www.deodoro.net/papers/>