

# João Prado

## IT Engineer Specializing in Mainframe Modernization and Cloud Solutions

Passionate and results-driven IT Engineer with over 5 years of experience bridging the gap between legacy mainframe systems and modern cloud technologies. Expertise in mainframe development (Assembler and COBOL), cloud infrastructure provisioning, DevOps practices, and full-stack development. Proven ability to lead digital transformation projects, automate complex processes, and implement scalable solutions in large enterprise environments.

## Technical Skills

- **Programming Languages:** Python, COBOL, Assembler, Java, JavaScript, TypeScript, Node.js, REXX
- **Cloud Platforms:** AWS (EC2, Lambda, S3, RDS, Neptune, ECS, API Gateway), Terraform, OpenShift, Azure Cloud Shell
- **DevOps Tools:** CI/CD Pipelines, Git, GitHub Actions, GitLab, Jenkins, Docker, Kubernetes
- **Databases:** PostgreSQL, Amazon RDS, Amazon Neptune (Gremlin), MongoDB, DB2 on z/OS
- **Web Development:** Node.js, Express.js, React.js, Django, Flask, RESTful APIs
- **Automation & Scripting:** JCL, REXX, zOSMF, Shell Scripting
- **Data Processing:** ETL Processes, Pandas, Spark, Hadoop, Snowflake, psycopg2, gremlinpython
- **Mainframe Technologies:** IBM Mainframe, z/OS, TSO/ISPF, IBM MQ, Mainframe Transaction Monitors
- **Performance Testing:** Load Testing Tools, JMeter, Performance Optimization, Monitoring & Logging
- **Security & Authentication:** IAM, STS, Vault, SSL/TLS Certificates, PrivateLink, Azure Authentication
- **Other Technologies:** VMware, SAP ERP, Open Policy Agent, Linux
- **Soft Skills:** Problem-Solving, Team Collaboration, Communication, Project Management, Leadership, Code Review, Continuous Integration/Delivery
- **Languages:** Portuguese (Native), English (Professional Proficiency)

## Experience

### IT Engineering Analyst (Mid-Level) | Itaú Unibanco

Jul 2022 – Present | São Paulo, Brazil

- **Cloud Infrastructure Provisioning:**
  - Provisioned complete AWS infrastructure including EC2, Lambda, S3, RDS, Neptune, Security Groups, IAM roles/policies, and S3 bucket notifications.
  - Automated deployments using CI/CD pipelines via GitHub Actions and managed with Terraform for consistency and scalability.
- **Mainframe Data Offloading:**
  - Developed Python tools to automate data extraction and offloading from mainframe to AWS.
  - Implemented secure integration between mainframe and AWS S3 via PrivateLink, optimizing large-scale data migration.
- **Data Processing & Ingestion Pipelines:**
  - Built robust Python applications for data processing and ingestion in AWS, supporting PostgreSQL and Amazon Neptune.
  - Utilized psycopg2 and gremlinpython libraries for complex database operations and Gremlin queries.
  - Orchestrated ETL processes using AWS Lambda and managed data flow with S3 for high performance.
- **Mainframe Modernization:**
  - Developed advanced Assembler modules and COBOL programs enabling direct calls to AWS APIs using Web Client Toolkit.
  - Facilitated integration of legacy systems with modern cloud services without rewriting COBOL programs.
  - Modeled mainframe transactional data to create hierarchical visualizations, optimizing transaction flows.
- **Full-Stack Development:**
  - Created a full-stack Node.js application with MongoDB to manage structured commercial data, including images and menus.
  - Implemented responsive interfaces with dynamic filtering and integrated Google Maps and Places APIs.
  - Developed authentication systems with secure encryption and validation.
- **Performance Testing & Optimization:**
  - Developed Python and Node.js tools for load testing mainframe transactional environments, handling up to 1,000 TPS.
  - Analyzed performance metrics to optimize system resilience under high-load conditions.
- **DevOps & Monitoring:**
  - Implemented CI/CD pipelines using Terraform and AWS for ECS Cluster provisioning.
  - Configured load balancers and horizontal scaling with auto-scaling groups based on CPU and memory usage.
  - Developed Java applications following MVC patterns, integrating with Amazon Neptune and implementing real-time monitoring.
- **Automation & Scripting:**
  - Automated critical mainframe processes using Python and zOSMF, improving operational efficiency and SRE indicators.
  - Developed graphical interfaces using Panels and REXX for automated log analysis.
- **Application Development with OpenShift:**
  - Developed an interactive application in OpenShift for hosting and executing user-submitted Python code.
  - Integrated Azure authentication and generative AI to assist users in script creation and optimization.
  - Implemented versioning and audit logging for transparency and security.
- **API Gateway & Custom Domains:**
  - Developed AWS API Gateway with custom domains and SSL/TLS certificates for development, staging, and production environments.
  - Automated API contract deployment and linked API Gateway with ECS Cluster using VPC Link.

### IT Engineering Analyst (Junior) | Itaú Unibanco

Oct 2021 – Jul 2022 | São Paulo, Brazil

- **Application Development:**
  - Developed and maintained mainframe applications using Assembler and COBOL.
  - Ensured high-quality code for critical transaction processing and data management.
- **IBM MQ Integration:**

- Developed Assembler modules for IBM MQ communication, handling connection, put/get messages, and data exchange.
- Enhanced transaction reliability and performance between systems.
- **HTTP Request Simulation:**
  - Developed advanced COBOL programs to simulate and validate HTTP requests.
  - Tested all HTTP verbs and analyzed response metrics like status codes, latency, and response sizes.
  - Validated communication flows between mainframe and cloud systems.
- **Load Testing Tools:**
  - Developed web applications using Express.js for load testing mainframe functionalities.
  - Simulated high-volume transaction scenarios to evaluate mainframe performance under stress.
  - Provided detailed reports for infrastructure optimizations.
- **Automation & Scripting:**
  - Created REXX scripts and graphical interfaces for automated administrative tasks and log analysis.
  - Increased productivity by 20% and maintained system integrity through proactive issue resolution.
- **System Integration:**
  - Integrated legacy systems with modern platforms via APIs, MQ, and FTP.
  - Improved data flow efficiency and enabled secure data exchange between different environments.
- **Support & Maintenance:**
  - Provided continuous support in a "Build and Run" environment.
  - Ensured systems met specifications and adapted to new requirements.

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## Project and Automation Engineer | Pirelli

Feb 2021 – Oct 2021 | Campinas, São Paulo, Brazil

- **Automation and Electrical Architecture Design:**
  - Designed and implemented automation and electrical systems for industrial and commercial applications.
  - Engineered electrical panels and performed circuit sizing, ensuring safety, efficiency, and compliance with technical standards.
- **Industrial Machine Programming and Equipment Commissioning:**
  - Programmed industrial machinery and commissioned modern equipment, ensuring high precision and operational efficiency.
  - Integrated automated systems to optimize processes and increase productivity.
- **Project Management and Coordination:**
  - Managed and coordinated automation projects, ensuring functionality and synergy among all system components.
  - Adopted efficient management strategies, resulting in more reliable and productive operations.

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## 📖 Education

### Bachelor of Engineering in Electrical and Electronic Engineering

State University of Campinas (Universidade Estadual de Campinas - UNICAMP) | 2016 – 2020

- **Core Studies:**
  - **Fundamentals:** Mathematics, Physics, Chemistry, Mechanics, Computer Science, Electricity, Material Resistance, Transport Phenomena.
  - **General Studies:** Administration, Humanities, Social Sciences, Law, Ethics, Economics, Environmental Sciences.
  - **Professional Formation:** Electric Circuits, Electrical Measurements, Electromagnetism, Electronics, Electrical Materials, Energy Conversion, Control Systems.
  - **Specializations:** Telecommunications, Telematics, Electric Power, Microelectronics, Optoelectronics, Computer Engineering, Automation and Control, Biomedical Engineering.

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## 📜 Certifications

- **AWS Certified Cloud Practitioner** – Amazon Web Services (AWS) | **Issued:** Nov 2022 | **Expires:** Nov 2025
- **Building Cloud Computing Solutions at Scale Specialization** – Duke University | **Issued:** Jul 2024
- **Cloud Machine Learning Engineering and MLOps** – Duke University | **Issued:** Jul 2024
- **Cloud Data Engineering** – Duke University | **Issued:** Jun 2024
- **Cloud Virtualization, Containers, and APIs** – Duke University | **Issued:** Jun 2024
- **Spark, Hadoop, and Snowflake for Data Engineering** – Duke University | **Issued:** Jun 2024
- **Object-Oriented Programming in Python** – Duke University | **Issued:** May 2024
- **Generative AI with Large Language Models** – Coursera | **Issued:** Apr 2024 | **Expires:** Apr 2026
- **Interskill Mainframe Specialist Certifications** – Interskill Learning
  - Mainframe Environment Fundamentals
  - Mainframe Performance Fundamentals
  - File Transfers Foundations
  - REXX Programming
  - Parallel Sysplex Foundations
  - TSO and ISPF Expert
  - Cloud Fundamentals
  - DevOps Fundamentals
  - And others (Total of 28 certifications)

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- **Languages:** Portuguese (Native), English (Professional Proficiency)

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## ✉ Contact

- **Email:** [joaoprado@outlook.com.br](mailto:joaoprado@outlook.com.br)
- **LinkedIn:** [linkedin.com/in/joaoprado96](https://www.linkedin.com/in/joaoprado96)
- **GitHub:** [github.com/joaoprado96](https://github.com/joaoprado96)
- **Location:** São Paulo, Brazil

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## ✉ Recent Projects

### Mainframe to AWS Data Offloading

*Python tools for automating data extraction from mainframe to AWS S3 via PrivateLink.*

- **Technologies Used:** Python, AWS S3, PrivateLink, z/OS, JCL, REXX
- **Key Features:** Secure data transfer, automation scripts, large-scale data migration.

### Full-Stack Application for Commercial Data Management

*Node.js application with MongoDB to manage and display commercial establishment data.*

- **Technologies Used:** Node.js, Express.js, MongoDB, React.js, Google Maps API
- **Key Features:** User authentication, dynamic filtering, geolocation features.

### Load Testing Tools for Mainframe Environments

*Python and Node.js tools for performance testing of mainframe transactional systems.*

- **Technologies Used:** Python, Node.js, Express.js, TCP/IP, z/OS
- **Key Features:** High TPS support, performance metrics, stress testing.

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## ✉ Currently Learning

- Advanced Machine Learning techniques
- Container orchestration with Kubernetes
- Exploring DevSecOps practices
- Integration of AI and Machine Learning in mainframe environments

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## ✉ Let's Connect

I'm always open to discussing new projects, creative ideas, or opportunities to be part of your visions. Let's connect and make something amazing together!

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*This resume was created to summarize my professional experience and skills. For more details, please visit my [LinkedIn profile](#) or check out my [GitHub repositories](#).*