Ricardo Ferraz Leal

Gaithersburg, MD (Greater Washington, DC) | [redacted] | [redacted]

Summary

Principal Software Engineer with over 20 years of experience specializing in architecting and scaling secure, cloud-native solutions. A proven leader in distributed systems, I have a track record of driving technical development, optimizing performance, and delivering impactful, business-critical applications. My expertise spans cloud platforms (AWS, Azure, GCP), modern DevOps practices, and building resilient data infrastructures that have directly led to zero customer churn.

Technical Skills

- Programming Languages: *Go* (5+ yrs), *Python* (15+ yrs), *C/C++* (10+ yrs)
- Cloud Platforms: AWS, Azure, GCP
- DevOps/DevSecOps: CI/CD (CircleCI, GitLab), Terraform, AWS CloudFormation, Service Meshes (Istio), Google Cloud Build
- Data Engineering & Warehousing: ELT (Google BigQuery, BigFrames), ETL (AWS Glue/Spark/PySpark), Data Catalogs (AWS Glue), Redshift
- Databases: MySQL, PostgreSQL, MongoDB, DynamoDB
- Observability: OpenTelemetry, Prometheus, Datadog, Grafana
- Durable Execution: Temporal, DBOS

Experience

Trustle (remote, USA) | Principal Software Engineer | May 2024 - Present

- Drove the technical development of the 'Just-In-Time Access' app, resulting in a more secure and efficient access model for all cloud providers.
- Architected an ELT pipeline to import provider-specific API data into BigQuery and ultimately in OLTP database. Using DBOS, Apache Arrow, CDC tables and general models into Postgres, I created a scalable, durable and unified data source.
- Built a highly customized Access Request workflow based on Rego and OPA (Open Policy Agent)
- Prototyped many solutions using the GCP managed versions of Apache Airflow and Apache Beam

Sezzle (remote, USA) | Principal Software Engineer | Oct 2023 - Jan 2024

- Led the notifications service refactor effort to reliably send millions of daily notifications.
- Built a highly scalable & resilient *Go* & MySQL task queue.

Snyk (remote, USA) | Senior Software Engineer | Feb 2022 - Oct 2023

- Feature Lead for several facets of the Snyk Cloud and IaC plus.
- Successfully migrated & enhanced Fugue Cloud Security Posture Management (CSPM) tool from AWS services to Kubernetes, achieving cost reduction & improved performance.
- Built an Azure Cloud scanner using ARM API & Pulumi Terraform Bridge.
- Developed secure & documented APIs using OpenAPI standards.
- Implemented 100% *Go* solutions (prototyping in *Python*), deployed on Kubernetes.
- Optimized microservice performance & availability for seamless operation.
- Defined KPIs for service effectiveness.
- Increased DW efficiency by 3x through re-architecture.

Fugue - acquired by Snyk (Hybrid, Washington D.C.) | Senior Software Engineer | Oct 2019 - Feb 2022

- Developed Fugue, a highly scalable & secure CSPM tool using Terraform providers for multi-cloud vulnerability assessments.
- Established API specifications for frontend & FugueCLI.
- Introduced FastAPI & Pydantic for significant performance improvements.

- Designed & implemented a modular Python/Go monolith on AWS (Lambda, ECS, SNS/SQS, Aurora) for high availability & fault tolerance.
- Designed & developed a Data Warehouse using AWS Glue (ETL) & Redshift/S3 Parquet
- Optimized SQL queries for fast & reliable data analysis tools access.
- Zero customer churn & significant platform growth led to Snyk acquisition.

Oak Ridge National Lab (Tennessee, USA) | Research Software Engineer | Oct 2014 - Oct 2019

- Architected and developed the Neutron Reduction Web Portal (Python/Django, PostgreSQL, Docker, Celery-Redis) with in-house cluster for ETL jobs.
- Led blue sky research projects, applying AI/Machine Learning (Scikit Learn, TensorFlow) and GPU processing (CUDA) for data classification and predictive modeling.

Institut Laue-Langevin - ILL (Grenoble, France) | Research Software Engineer | June 2012 - Sept 2014

- Designed and led the development of the Live Data Analysis platform: a RESTful Server integrated with legacy and modern data reduction software.
- Defined a common data analysis infrastructure for neutron reactor sources, including code review and prototype development based on the Mantid Framework.

European Synchrotron Radiation Facility - ESRF (Grenoble, France) | Post-Doctoral Fellow | Feb 2009 - Jan 2012

- Developed new methodologies, algorithms, and user-friendly software for X-ray data collection strategy planning.
- Developed computer vision algorithms for rendering 3D models of micrometer crystals from *in-situ* images.
- Led outreach activities, communicating scientific research to the public in three languages.

ESRF, ILL and Keele University (Grenoble, France & Keele, UK) | PhD Student | Sept 2005 - Jan 2009

- Developed new instrumentation and a 3D crystal model for absorption corrections in macromolecular crystallographic X-ray diffraction data.
- Conducted joint X-ray and neutron studies of DNA oligonucleotides.

ESRF (Grenoble, France) | Software Architect | July 2004 - Sept 2005

- Designed and developed a 3-tier system architecture for the Information System for Protein Crystallography Beamlines (ISPyB). The framework is now the base of multiple internal projects and is still used across many synchrotrons in Europe.

Other professional experience from Jan 2002 to June 2004, includes Software Consultant for Sybase, Vodafone and Vizzavi and Java instructor for Xpand-IT and Software AG, both in Lisbon, Portugal.

Education

- PhD in Physics (Computer Vision & Image Processing), 2009 | Keele University, UK
- MSc in Computer Science, 2002 | Instituto Superior Técnico (IST), Portugal

Additional Information

- Open-source contributor to scientific initiatives (details upon request)
- Ex-Scientist with deep knowledge in scientific *Python* (SciPy program committee member)
- Several articles published in pair reviewed journals and oral presentations in international conferences.