Jérémy Goutin

Solutions Architect. Freelance expert in software, cloud, & DevOps

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Key Skills

Cloud Architecture

AWS Expert with extensive experience:

- **Serverless** and classical cloud solution architecture
- Mastered services: VPC, EC2, ELB, RDS/Aurora, Lambda, DynamoDB, CloudFront, CloudWatch, SQS, SNS, SES, Cognito, Route53, S3, ECS, IAM
- **Infrastructure as Code** with **Terraform**
- Cloud security: least privileged IAM policies, VPC firewall, SecurityHub
- **FinOps**: cost optimization and multi-account architecture
- Successfully passed external security audit

Other Cloud Providers:

- **Microsoft Azure**: AAD, MS365, Azure DevOps
- **OpenStack**
- **Alibaba Cloud**

Software Development

Python Expert with strong experience in:

- Software architecture and data model design
- Web backend development and REST API with **FastAPI**
- Database management with **SQLAlchemy** (PostgreSQL) and **DynamoDB**
- Scientific Python: **Numpy**, **Scipy**, **Pandas**, **Matplotlib**, **Cython**
- Quality code, automated testing, and maintainability

DevOps & CI/CD

- Architecture and implementation of complete CI/CD pipelines
- Total automation from *push* to production deployment
- **DevSecOps**: security integration in pipelines
- **GitOps**: infrastructure and deployment management via Git
- **GitHub Actions**, **GitLab CI/CD**, **Azure Pipeline**, **AWS CodeBuild**
- Web service and software package deployment
- **Ansible** for server configuration
- **Docker** for containerization

Artificial Intelligence & LLM

- **LLMOps**: deployment and management of language models in production
- Enterprise AI platform architecture with data governance
- **RAG** (Retrieval-Augmented Generation) integration to enrich LLM responses
- Use of **AWS Bedrock** for access to various language models
- Implementation of AI chatbots and development assistants

System Administration

Linux: Expertise on Fedora, CentOS, Debian, Ubuntu, Alpine Linux

- Configuration and automation with **Ansible**
- Security and *hardening* of Linux
- Firewall management with **PfSense**
- Storage with **TrueNAS**

Functional Skills

- Complete solution architecture
- Complex problem solving
- High autonomy and critical thinking
- Proactive and rigorous
- Best practices compliance
- Fast learning of new technologies

Significant Projects

Enterprise AI/LLM Platform (July-August 2025)

Context: Freelance Project
Achievements:

- Creation of a centralized solution to exploit LLM models with data governance
- Deployment of an LLM platform on AWS infrastructure
- Development of a chatbot as a single, controlled access point to AI capabilities
- Integration of **RAG** (Retrieval-Augmented Generation) to enrich responses with internal documents
- IDE integration to enable development teams to generate and improve code
- Use of **AWS Bedrock** for access to a varied portfolio of language models
- Strict governance to protect company data

Technologies: AWS Bedrock, Python, RAG, LLM, AI

GitLab Runners Migration to AWS Serverless Architecture (March-June 2025)

Context: Freelance Project
Achievements:

- Complete migration of CI/CD infrastructure to AWS serverless architecture
- Deployment of GitLab runners based on **ECS Fargate ARM** for generic tasks (Terraform, curl, linters)
- Implementation of GitLab runners leveraging **AWS CodeBuild** for compilation tasks
- Abandonment of static IAM access keys in favor of **temporary least privileged IAM roles**
- Centralization and securing of secrets management (Docker registries, Maven and NPM repositories)
- Native support for **ARM64** architecture for Docker image building
- Notable performance improvement and reduction of waiting times
- On-demand scalability eliminating job congestion
- Significant optimization of operational costs

Technologies: GitLab CI/CD, AWS (ECS Fargate, CodeBuild, IAM), Docker, ARM64

AWS Infrastructure Standardization with Terraform (October 2023-October 2024)

Context: Freelance Project
Achievements:

- Development of reference architectures via reusable Terraform modules
- Migration from legacy EC2 architectures to AWS managed services (ECS, Aurora, Lambda, SQS, SES)
- Creation of modules with clean interface encapsulating advanced and complex configuration
- Native integration of security best practices (least privileged IAM, security groups, encryption, monitoring)
- Notable reduction in time to set up new applications

- Improved reliability through standardization
- Simplified infrastructure maintenance
- Adoption of DevOps processes by development teams

Technologies: Terraform, AWS (ECS, Aurora, Lambda, SQS, SES, IAM), Infrastructure as Code

Multi-Account AWS VPC Architecture (October 2023-April 2024)

Context: Freelance Project
Achievements:

- Design and implementation of a multi-account **Dualstack (IPv4/IPv6)** shared VPC
- Integration of **AWS Network Firewall**, **Route53 Resolver Firewall**, **AWS Site-to-Site VPN**
- **FinOps** optimization with simplified and centralized management
- Configuration of **VPC Endpoints** to secure communications
- Architecture enabling optimal scalability and security

Technologies: AWS VPC, Terraform, Network Firewall, Route53, VPN

Complete Web Platform V2 (2018-2023)

Context: Accelize - Architecture & Development
Achievements:

Cloud Architecture:

- High availability web service with multi-AZ EC2 backend
- **Angular** frontend with **S3** and **CloudFront**
- **Serverless** microservices based on **Lambda**
- User authentication with **Cognito**
- Fully automated deployment via CI/CD

Software Architecture:

- Complete design of SQL (**PostgreSQL**) and NoSQL (**DynamoDB**) data models
- Main backend development in Python with **FastAPI** and **SQLAlchemy Core**
- Python microservices design and development
- Definition of all internal and external APIs (REST)
- Testing and monitoring strategies
- Optimized Linux configuration for EC2 servers

Technologies: AWS (EC2, Lambda, S3, CloudFront, Cognito, DynamoDB, RDS), Python, FastAPI, SQLAlchemy, PostgreSQL, Terraform

FPGA Application Execution Service in the Cloud (2018-2023)

Context: Accelize - Cloud Architecture
Achievements:

- **Serverless** architecture for executing public FPGA demos
- Automatic provisioning and termination of FPGA instances on **AWS** and **OpenStack**
- Securing Docker execution (isolation, sandboxing)
- Use of **Lambda**, **CloudFront**, **S3** for infrastructure
- Automatic resource lifecycle management based on demand

Technologies: AWS (Lambda, CloudFront, S3, EC2), OpenStack, Docker, Python

Serverless Linux Package Repositories (2018-2023)

Context: Accelize - Cloud Architecture
Achievements:

- Serverless architecture to host **Debian** and **Red Hat** repositories
- Distribution via **S3** and **CloudFront** with high availability
- Automated package addition via CI/CD (internal packages)

- Web service for partners (external package upload)
- Automatic metadata and GPG signature updates
- Use of **Lambda** for asynchronous processing

Technologies: AWS (S3, Lambda, CloudFront), Python, CI/CD, GPG

Secure AWS Development Environment (2018-2023)

Context: Accelize - Cloud Architecture
Achievements:

- Design of a multi-user internal development environment
- **Resource ownership** system for traceability
- **Least privileged** IAM policies for each developer
- Automatic cost management with orphaned resource termination
- Automatic backups of development instances
- Monitoring and alerting on expenses

Technologies: AWS (IAM, EC2, CloudWatch, Lambda), Terraform, Python

Corporate IT Infrastructure (2018-2023)

Context: Accelize - System Administration
Achievements:

- Complete architecture based on **Microsoft Azure**, **AAD**, **MS365**
- **Single Sign-On (SSO)** between all services (AWS, GitHub, MS365)
- Migration from **Google Workspace** to **MS365**
- Automated Windows laptop management (provisioning, configuration, security)
- **Azure DevOps** administration and repository management

Technologies: Microsoft Azure, AAD, MS365, AWS, GitHub, PowerShell

DevSecOps CI/CD Pipelines (2018-2023)

Context: Accelize - DevOps
Achievements:

- Design and implementation of numerous CI/CD pipelines
- Complete automation: testing, validation, security, deployment
- Integration of automatic security scans (**DevSecOps**)
- Automated creation and update of Linux images with **Ansible**
- Building and publishing optimized **Docker** images
- Automatic deployment of web services and packages

Technologies: Azure Pipelines, GitHub Actions, Docker, Ansible, Python

Optical Analysis Software (2013-2017)

Context: Thales SESO - Software Development
Achievements:

- Complete development of optical analysis software for Windows
- More than **70 feature modules** in a scalable architecture
- Advanced optical calculations and image processing
- Performance optimization with Numpy and Cython
- Complete user interface with **Qt**
- Research and implementation of specialized algorithms
- Automation of optical test benches

Technologies: Python, Qt, Numpy, Scipy, Cython, Windows

Test Software for Test Bench (2017-2018)

Context: SuperSonic Imagine - Software Development
Achievements:

- Development of electronic test software on **Debian**
- **Client/server** architecture for remote control
- Instrumentation and communication with various equipment
- Calculation optimization with **Numpy**
- Implementation of **SPC** method (Statistical Process Control)
- Automated test scenarios

Technologies: Python, Debian, Numpy, Serial/TCP Communication

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Open Source Contributions

Active contributor on various open source projects available on GitHub:

- Development and maintenance of Python libraries
- Contribution to third-party projects
- Creation of tools for the community

https://github.com/jgoutin

Languages

- **French**: Native
- **English**: Professional in writing, intermediate in speaking
- **German**: Basic notions

Availability

Currently available for consulting missions as a **freelance**.

Preferred areas of intervention:

- Cloud architecture and development (AWS)
- Python development (backend, API, microservices)
- DevOps and CI/CD
- Software architecture
- Cloud and system security
- Infrastructure migration and modernization

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