Maxime Sauvaget

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Backend Software Engineer — APIs · Distributed Systems · R&D

Backend software engineer with 10+ years of experience designing and developing complex distributed systems, APIs, and industrial IIoT platforms. Comfortable taking full ownership of R&D topics — DSL design, graph databases, code generation — and transferring that knowledge to the team. Experience in demanding environments: software vendors, consulting firms, and large industrial groups (GE, Schneider Electric).

SKILLS

Functional analysis Technical design System administration R&D

Programming Languages

- Proficient: C#, Python, C, C++
- Familiar: TypeScript, JavaScript, Scala, Go, SQL, LUA, Shell

Backend & Distributed Architecture

- Frameworks & APIs: .NET, ASP.NET, NestJS, gRPC, REST
- Messaging & events: RabbitMQ, MassTransit, MQTT
- Architectures: Microservices, Event-Driven, CQRS, SOA
- Edge computing: embedded agents, disconnected resilience, cloud/edge synchronization

Databases

- Relational: PostgreSQL, SQL Server, T-SQL
- Graph: neo4j, JanusGraph, Gremlin
- Time series: InfluxDB
- Cache: Redis

Cloud & Infrastructure

- Containerization: Docker, Kubernetes
- CI/CD: GitHub Actions, GitLab CI, Azure DevOps
- Administration: Linux, nginx, varnish
- Infrastructure as Code: Terraform

Observability & Reliability

- Monitoring & Alerting: Prometheus, Grafana
- Logging: Loki
- Tracing: OpenTelemetry, Jaeger

Design & Tooling

- Modelling: DDD, Design Patterns, SOLID, DSL design
- Code generation: Roslyn Source Generation, OGM
- UI & tools: WPF, VueJs, Angular
- Quality: TDD, Code Review, unit & integration testing
- Versioning: Git, GitHub, GitLab

Methodologies

- Scrum, Kanban, Agile

EXPERIENCE

Schneider ElectricMontpellier
Backend Developer · June 2024 – present

Design of an innovative solution for the configuration of industrial electrical equipment (IEC61850/SCL standard). The platform, built around containerized microservices, an event bus, and a graph database, serves as the single source of truth for client project development.

- Graph database: Led the R&D and evaluation of graph database solutions (neo4j then JanusGraph) — modelled the IEC61850/SCL standard as an indexed graph, defined a graph model for template-based configuration — domain graphs reaching ~5 million vertices and edges
- Domain graph OGM: Independently designed and developed a domain-specific OGM (Object Graph Mapper) encapsulating graph schema complexity and exposing a fluent API to business services — mentored the team on using and extending the OGM
- Code generation: Developed internal tooling based on Roslyn source generation to automate the production of mappings, Gremlin queries, and DTOs from domain models — technical reference on the subject within the team
- Microservices & events: Containerized microservices architecture (Docker), orchestration of business flows via MassTransit / RabbitMQ (sagas, publish/subscribe, error handling and retry)
- Development of REST APIs (.NET 8 / C#), unit and integration test coverage

Sport DecouverteLa Ciotat
Fullstack Developer · March 2022 – January 2024

E-commerce platform for booking sports and leisure activities online.

- Channel manager connector: Designed and developed a generic integration service between the internal booking system and third-party distributors (channel managers, partner APIs) — availability flow management, booking synchronization, and data reconciliation
- Microservices & events: Developed APIs and microservices in .NET 7 / C#, orchestrating asynchronous flows via MassTransit / RabbitMQ (publish/subscribe, error handling and retry)
- Back office: Maintained and evolved the business back office (ASP.NET, VueJs) — product, availability, and booking management
- Infrastructure & CI/CD: Server configuration generated as code, continuous deployment via Azure DevOps; Linux server administration (nginx, varnish, docker)

General ElectricMontpellier
R&D Software Engineer · July 2019 – February 2022

Division specialising in hardware and software design for energy distribution and transformation equipment. Greenfield design and development of an industrial IIoT platform for supervision, configuration, and communication with these devices.

- DSL & device modelling: Designed a DSL enabling runtime description of industrial devices — topology, configuration, communication protocols, and actions exposed to the platform; dynamically interpreted by backend services (NestJS / C#)
- MQTT protocol: Defined the MQTT communication language adopted across the platform — designed topics, payload schemas, and routing conventions between edge and cloud
- IIoT microservices architecture: Collaborated on the design and development of the cloud microservices architecture (NestJS, C#, PostgreSQL, InfluxDB) — REST and gRPC APIs, time-series storage, device state management
- Edge platform: Designed and developed the embedded edge agent (C, Docker) — bidirectional

communication with devices via MQTT, cloud synchronization, and disconnected resilience

- Legacy modernisation: Adapted and integrated an existing C# service for transient fault analysis into the new microservices architecture

UbisoftMontpellier
Tools Programmer · September 2017 – March 2019

Tools programmer on the production of Beyond Good & Evil 2 (Montpellier Studio).

- Developed internal tools in C# / WPF for production teams — object editor, animation editor
- Automated game asset integration pipelines via LUA scripts and macros, reducing repetitive manual tasks

Creative AtlantiqueNantes
Software Engineer · July 2016 – June 2017

- Assignment at *Meteodyn* (wind engineering and meteorology) — developed a C# / WPF frontend for wind turbine simulation tools

Sopra SteriaNantes
Software Engineer · September 2014 – June 2016

- Assignment at *Bouygues Immobilier* — designed and developed the financial management module of an ERP in service-oriented architecture (C# / WPF / Service Bus)
- Database performance optimisation: T-SQL queries, triggers, and stored procedures

Syd ConseilNantes
ERP Dynamics AX Developer · January 2013 – July 2014

- Developed business modules and webservices (C# / WCF) for ERP integration with industrial equipment via proprietary protocols (RS232)

EDUCATION

Supinfo
Degree: *Master of Science in Computer Science* | 2007-2012 | Nantes