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

System architecture | Technical leadership | R&D | DSL design | Edge computing

Programming Languages

- **Proficient**: C#, TypeScript, Shell
- **Familiar**: C, SQL, LUA

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**: JanusGraph, Gremlin, neo4j
- **Time series**: InfluxDB

Cloud, Infrastructure & Observability

- **Containerization**: Docker
- **CI/CD**: GitHub Actions, Azure DevOps
- **Administration**: Linux, nginx, varnish
- **Monitoring & Alerting**: Prometheus, Grafana
- **Logging & Tracing**: OpenTelemetry, Loki

Design & Tooling

- **Modelling**: DDD, Design Patterns, SOLID, DSL design, PEG grammars (PEG.js)
- **Code generation**: Roslyn Source Generation, T4
- **UI & tools**: WPF, VueJs, Angular
- **Quality**: TDD, Code Review, unit & integration testing
- **Versioning**: Git, GitHub
- **Methodologies**: Scrum, Kanban, Agile

EXPERIENCE

Schneider Electric Montpellier

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 Decouverte La 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 Electric

Montpellier

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

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Ubisoft

Montpellier

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

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Creative Atlantique Nantes

Software Engineer · July 2016 – June 2017

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

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Sopra Steria Nantes

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

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Syd Conseil Nantes

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**