# Paolo **Combi**

SENIOR BACKEND ENGINEER · DISTRIBUTED SYSTEMS · SOFTWARE ARCHITECTURE

*Berlin, Germany*

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*"Architecting high-scale distributed systems using Domain-Driven Design and Knowledge Graphs"*

## Summary

Senior Backend Engineer with over 10 years of experience in architecting and scaling high-traffic e-commerce platforms. Currently driving the evolution of the Ontologies domain at Vinted, transitioning legacy monoliths into flexible distributed systems using **Domain-Driven Design (DDD)** and Semantic Web technologies (**Knowledge Graphs**). A strategic thinker who bridges the gap between complex business requirements and technical implementation, with a proven track record in technical leadership, system decoupling, and mentoring. Passionate about building engineering cultures based on quality and shared knowledge, now aiming to leverage deep architectural expertise in a Staff/Principal Engineer role.

## Experience

### Vinted
*Berlin, Germany*

SENIOR BACKEND ENGINEER — *June 2023 – Present*

- **Technical Leadership:** Led the complex "Sizes" decoupling mission for over a year, managing the technical roadmap and cross-team alignment (Catalog, Discovery, Upload) to migrate legacy architecture.
- **New Vertical Launch (Books):** Spearheaded the backend implementation for the Books category; defined technical requirements, implemented multi-language support, and managed DSA compliance A/B testing, delivering the full scope on time.
- **Architecture & Knowledge Graph:** Developed a Proof of Concept (POC) using Apache Jena to introduce Knowledge Graphs for category visibility, defining the strategy for future discovery capabilities.
- **System Decoupling:** Successfully migrated and decoupled ItemAttribute and ItemFacet logic from the Ontologies package to Listing packages, resolving complex circular dependencies.
- **Performance & Scalability:** Designed APIs for the "Electronics V2" launch (Brands/Models) and conducted load/stress testing to ensure service scalability under production loads.
- **Data Integrity:** Executed massive data migrations (e.g., Material data cleanup) and rollback strategies for personalization features, ensuring zero impact on the Data Warehouse or UX.
- **Mentorship:** Revamped team onboarding documentation and provided actionable feedback to junior engineers, fostering their technical growth.

### AMBOSS GmbH
*Berlin, Germany*

SENIOR SOFTWARE ENGINEER — *Sep. 2021 – May 2023*

- **Technical Leadership (PHP Guild):** Led the PHP Chapter comprising **60+ engineers**, defining coding standards, best practices, and the technical roadmap in weekly alignment with the CTO.
- **Monolith Decomposition Strategy:** Drove the architectural decoupling initiative by analyzing and implementing patterns (inspired by Sam Newman), specifically adopting **Branch by Abstraction** to safely refactor legacy systems.
- **Microservices Architecture (CMS):** Designed the architecture for a new internal CMS, fully separating the editorial database and pipelines from the monolith. This reduced deployment and bug-fix cycles **from days to hours** while increasing system stability.
- **Observability & Performance:** Overhauled the logging and monitoring ecosystem (Sentry, Datadog), implementing granular endpoint analysis that allowed developers to identify and resolve performance bottlenecks proactively.
- **Domain-Driven Design:** Facilitated organizational change by introducing DDD principles and organizing Event Storming workshops to model complex business domains.

### Lamia Oy
*Helsinki, Finland*

BACKEND DEVELOPER & TECH LEAD — *May 2019 – Sep. 2021*

- **Technical Leadership:** Led an agile squad of 3 developers (Backend/Frontend), partnering with Product Managers to define the technical strategy and roadmap for enterprise E-commerce solutions.
- **High-Volume Data Engineering (PIM):** Engineered the PIM integration to synchronize **millions of products**. Optimized the batch ingestion pipeline by leveraging Magento 2 evolutions, reducing the daily update window from overnight to **3-4 hours**.
- **Advanced Caching Architecture:** Designed a custom caching strategy using Redis and Elasticsearch. This system handled complex dynamic rules (personalized offers, discounts) and strict partner/competitor visibility logic without compromising performance.
- **Mentorship & Onboarding:** Mentored 4 international developers, guiding them through technical onboarding and assisting with their relocation integration to ensure rapid team productivity.
- Organized the company's participation and knowledge sharing for the Magento2 conference in Stockholm.

# Early Career & Consulting

### I.C.E. Suisse SA
*Ticino, Switzerland*
IoT Big Data Analyst & Solutions Architect
*Nov. 2017 – May 2019*

- **Critical IoT Architecture (Swisscom Collaboration):** Designed a real-time monitoring POC for defibrillators to ensure operational reliability in life-saving scenarios. Utilized **LoRaWAN (Swisscom LPN)** and **MQTT** on custom-modified Arduino hardware to transmit health-check signals.
- **Big Data & BI Strategy:** Led Business Intelligence consulting for a major Italian Bank, implementing ERP systems and designing custom Node.js/JavaScript architectures for complex Qlik data integration.
- **Strategic Roadmap:** Defined the company's IoT strategy, evaluating emerging network protocols and cloud ingestion architectures to bridge hardware prototyping with scalable software solutions.
- Delivered technical talks on IoT solutions and Hybrid Cloud integrations at industry conferences in Milan and Switzerland.

### Nextmove – A little bit of style
*Lecco, Italy*
Full Stack Web Developer
*2016 – 2017*

- **Framework Engineering:** Designed and developed a proprietary **PHP MVC Framework** to standardize development workflows across multiple corporate projects, reducing setup time for new deliverables.
- **Infrastructure Management:** Managed the full LAMP stack infrastructure, including DNS configuration, Database Security, and automated backup strategies for client portals.
- **Legacy Refactoring:** Led the refactoring of legacy codebases, introducing modern PHP standards and optimizing SQL queries for improved performance.

### iPratico S.r.l.
*Lecco, Italy*
Web Developer
*Dec. 2012 - Apr. 2015*

- **Data Visualization Platform:** Developed a statistical analysis portal using PHP (CodeIgniter) and MySQL, implementing complex SQL aggregations for real-time reporting.
- **Frontend Engineering:** Integrated advanced visualization libraries (Highcharts, DataTables) to build interactive dashboards for business intelligence.
- **Performance Optimization:** Optimized server-side logic and database schemas within a LAMP environment, ensuring stability under heavy reporting loads.
- Adopted Agile methodologies (Jira) and version control (SVN) to professionalize the team's development lifecycle.

### Sirti S.r.l. / Reply (Santer S.p.A.)
*Milano, Italy*
Software Developer / Analyst (Early Career)
*Jul. 2012 - Dec. 2012*

- **Sirti**: Developed CRM internal tools, expanded PERL APIs, and managed Oracle PL/SQL data processing.
- **Reply**: Supported functional analysis and requirement gathering for Healthcare management systems in the Lombardy region.

# Skills

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|---|---|
| **Architecture** | Domain-Driven Design (DDD), Microservices, Event-Driven Architecture, Monolith Decomposition, TDD |
| **Languages** | Ruby, PHP, Go (Golang), SQL, JavaScript, TypeScript |
| **Data & Semantic** | PostgreSQL, MySQL, Redis, Apache Jena (RDF/SPARQL), Elasticsearch, Knowledge Graphs |
| **Frameworks** | Ruby on Rails, Symfony, Laravel, Magento2 |
| **DevOps & Cloud** | Google Cloud Platform (GCP), AWS, Docker, Kubernetes, Jenkins, Datadog |
| **Leadership** | Technical Strategy, Team Mentoring, Public Speaking, Stakeholder Management, Agile Methodology |

# Certifications & Advanced Training

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|---|---|---|
| 2025 | **Strategic Design for Software Teams**, with Eric Evans (Author of "Domain-Driven Design") | *Avanscoperta* |
| 2024 | **Designing Microservices Architecture**, with Chris Richardson (Author of "Microservices Patterns") | *Avanscoperta* |
| 2023 | **Domain Models in Practice**, DDD, CQRS, and Event Sourcing Intensive Workshop | *Avanscoperta* |
| 2022 | **EventStorming Master Class**, Modeling Complex Domains (with Alberto Brandolini) | *Avanscoperta* |
| 2018 | **IoT Bootcamp (LoRaWAN),** Intensive training on Swisscom LPN infrastructure & Protocols | *Swisscom (Zurich)* |
| 2017 | **Big Data Specialization**, 6-Course Series on Distributed Computing (Hadoop, Spark) | *Coursera* |
| 2017 | **IoT Integration Workshop**, Strategies for legacy system integration | *Soiel (Milan)* |

# Public Speaking

## CONFERENCE SPEAKER

### Internet of Things, Big Data & Machine Learning Conference
*Lugano, Switzerland*

GUEST SPEAKER (HOSTED BY AITI)                                                                                   *Jul. 2018*

- Presented architecture patterns for ingesting high-frequency IoT data into traditional Business Intelligence and Predictive Analytics pipelines.

### TIBCO Jaspersoft 7.1 Launch Event
*Milan, Italy*

TECHNICAL PRESENTER                                                                                             *Jul. 2018*

- Showcased a real-world case study: "Integrating IoT Telemetry with TIBCO Jaspersoft," demonstrating real-time data visualization techniques.

### Qlik Predictive Analytics Series
*Milan, Italy*

WEBINAR SPEAKER                                                                                               *Mar. 2018*

- Delivered a session on "Predictive Analysis of IoT Data," exploring how to leverage Qlik's engine for sensor data forecasting.

# Education

### University of Milano-Bicocca
*Milan, Italy*

BACHELOR'S DEGREE IN COMPUTER SCIENCE                                                                              *2011*

- Focused on Software Engineering, Distributed Systems, and Fundamental Computer Science (INF/01, ING-INF/05).
- *Note: The Thesis project on Interactive Whiteboards is detailed in the "Key Projects" section.*

# Key Projects

### Independent Consultant (Various Clients)
*Milan, Italy*

FREELANCE WEB ENGINEER & CONSULTANT                                                                           *2010 – 2016*

- **End-to-End Delivery:** Managed the full Software Development Life Cycle (SDLC) for 10+ clients across diverse industries (Legal, Fashion, Retail, Music).
- **E-commerce & CMS Solutions:** Architected and deployed custom E-commerce platforms (PrestaShop, WooCommerce) and corporate portals for clients such as **Falket**, **Basketzone**, and **Daylight Italia**.
- **Custom Development:** Developed bespoke PHP modules, admin panels, and frontend experiences, optimizing legacy CMS (Joomla, WordPress) for performance and SEO.

### Low-Cost Interactive Whiteboard System
*University of Milan - Bicocca*

RESEARCH PROJECT (BACHELOR'S THESIS)                                                                             *2011*

- **Hardware/Software Integration:** Engineered a multi-point interactive whiteboard system using **Java (JEE)** and **Nintendo Wiimote** infrared tracking technology.
- Implemented real-time signal processing algorithms to convert IR light sources into coordinate inputs, creating a low-cost alternative to commercial smartboards.

# Interests & Community

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|---|---|---|
| 2017-2019 | **Tech Conference Speaker**, Delivered talks on IoT solutions and Software Architecture at industry events | *Italy/Switzerland* |
| Present | **Theater Practitioner**, Active in theater groups to refine Public Speaking, Improv, and Communication skills | *Berlin* |
| 2007-2010 | **Sales & Negotiation**, Honed persuasion and client-facing skills working in competitive sales environments (Nous Group, Mediamarket) | *Italy* |
| 2002-2004 | **Summer Work Experience**, Demonstrated grit and proactivity working as an electrical line installer during summer breaks (Sintel) | *Italy* |
| Lifelong | **Pianist**, Classical and Jazz piano enthusiast | *Private* |

# References

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| **Jarmo Krohns**, Head of Talent Acquisition @ Lamia | | *Helsinki* |
| **Sergio Padovan**, Founder @ ICE Suisse | | *Ticino* |
| **Fabrizio Conti**, Founder @ Nextmove | | *Lecco* |
| **Luigi Riva**, CTO @ iPratico | | *Lecco* |