Emanuele Manfredini



Full Stack Software Engineer

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TECHNICAL SKILLS

Languages	Python, Ruby, JavaScript, TypeScript, PHP, SQL, Swift, Java
Cloud & Infrastructure	AWS (EC2, RDS, S3, SES, SNS), Docker
Backend Frameworks	Flask, FastAPI, Django, Ruby on Rails, Node.js, PyMongo, SQLAlchemy, Beanie, ActionPack, ActiveRecord, Passport, Keycloak
Frontend Frameworks	Angular, React, Vue
Databases	PostgreSQL, MySQL, MongoDB, Redis
Messaging & Integration	RabbitMQ, AWS SQS, RESTful APIs
DevOps & CI/CD	GitHub, GitHub Actions, Betterstack
Testing	Pytest, Mocha, Minitest, cProfile
Best Practices	Test-Driven Development, EDA, API-First Design, Agile, DRY, OWASP, Secrets Management, PoLP
AI Tooling	Claude Code, LangChain

LANGUAGES

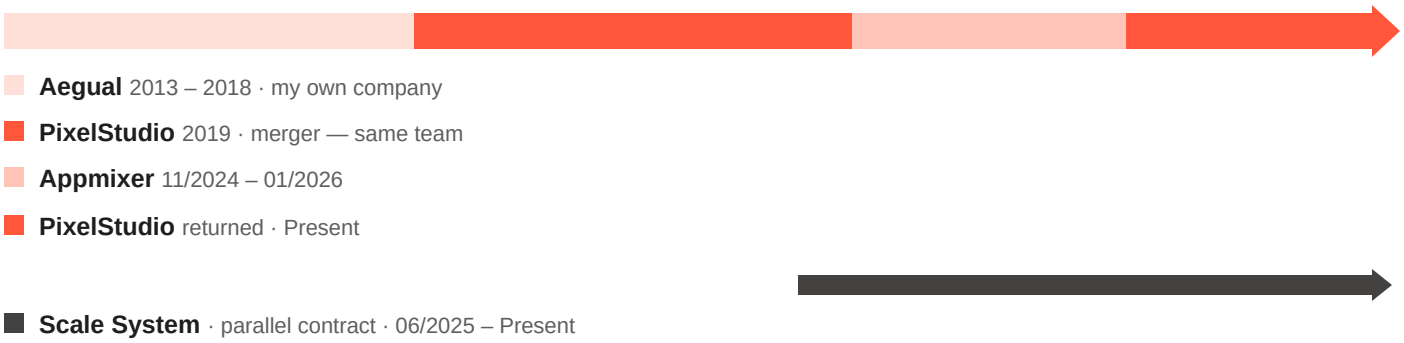
Italian	Native
English	Fluent

REFERRALS

> "I worked with Emanuele Manfredini for 12 years — six building a small company together, then continuing post-merger at greater scale. He reliably turned complex problems into clear, shippable solutions with speed and solid engineering. A key driver of our growth, he'd be a strong asset to any team."
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> **Edoardo Grossi — CTO & Owner, PixelStudio SRL**

> "I worked with Emanuele Manfredini on the development of an app for my company. Emanuele consistently demonstrated exceptional technical skills, creativity, and reliability throughout the project. He understood our goals quickly, proposed smart solutions, and delivered high-quality results on time. I highly recommend him for any software or app development project."
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> **Marcello Cesarini — CEO, ScaleSystem.ai**

CAREER TIMELINE



PROFESSIONAL EXPERIENCE

PixelStudio s.r.l.

01/2019 – Present · Genova, Italy

Senior Software Engineer

Continuation of Aegual, the consultancy I co-founded in 2013 and merged into PixelStudio in 2019 — over a decade with the same organization, leading multiple long-running products in parallel.

Lead Mobile Developer — Flowlead (Indoor Positioning for Cruise Ships)

02/2026 – Present

Technologies: Swift (iOS), Kotlin/Java (Android), Bluetooth Low Energy (BLE), device motion sensors, Claude Code

Developing an indoor tracking application that leverages mobile phone sensors and BLE beacons to track users' position and movement inside cruise ships, delivered by PixelStudio for MSC Cruises as final client.

Personally in charge of the iOS and Android application development while taking part in the entire technical decision process.

ROLES AND RESPONSIBILITIES

- Ideated the currently working algorithm to identify floor changes through stairs or elevators — the exact problem the client faced with the previous contractor, and the reason they engaged PixelStudio.
- Designing the system to refine BLE scans using the sensors available on the device, improving positioning accuracy.
- Brainstorm with the CEO and CTO on a weekly basis to refine the project and define documents and timelines.
- Went on board cruise ships in person to perform on-ground testing of the tracking system.

• Leveraged Claude Code to rapidly produce a presentable POC for validation with the client — the demonstration that secured the commission.

Lead Developer — Electronic Logbook (ELB) Software

01/2019 – Present

Technologies: Python (Flask), MongoDB (MongoEngine), RabbitMQ, Rsync, cProfile, Pytest

Led the development of the RINACube Electronic Logbook (ELB), a mission-critical platform designed to digitize vessel operations, ensure regulatory compliance (MARPOL, IMO), and improve data integrity for over 25 major international shipping firms.

The project's core technical challenge was delivering a highly reliable and scalable system capable of operating in challenging maritime environments with intermittent, low-bandwidth connectivity, while managing millions of compliance records for ashore fleet management.

ROLES AND RESPONSIBILITIES

• Re-architected the platform's core data-handling system, improving data efficiency while ensuring 100% backward compatibility for a seamless, zero-downtime production rollout after only two weeks of testing.

• Engineered the resilient ship-to-shore data synchronization system from the ground up, using RabbitMQ and rsync to guarantee data integrity despite frequent and prolonged network disconnections.

• Designed a dynamic multi-database backend to successfully shard a multi-million entry database by routing requests based on context; this system included API versioning to ensure concurrent support for all deployed client versions.

• Systematically identified and resolved critical performance bottlenecks using cProfile and flame graph analysis, improving the performance of key functions by over 10x and significantly enhancing application responsiveness.

• Acted as a key technical liaison with the RINA business department, translating complex maritime compliance requirements into actionable technical specifications for the development team (5 developers).

Frontend Engineer — Neptune Incident Manager (NIM)

01/2019

Technologies: Javascript (Angular), HTML, CSS

Played a key role in modernizing the frontend of the enterprise-level NIM platform (commissioned by Carnival Group), significantly improving developer productivity and application stability.

Developed and launched an Android companion mobile application using Ionic, extending the platform's capabilities to on-site personnel.

ROLES AND RESPONSIBILITIES

• Architected and built a foundational library of reusable Angular components and directives, establishing a new standard for UI development and accelerating the delivery of new features.

• Systematically refactored legacy modules to reduce technical debt, enhance maintainability, and align the codebase with modern Angular best practices.

• Engineered a cross-platform companion app using Ionic, providing a mobile-first experience for users in the field.

• Integrated native device functionalities using Quagga.js to implement a high-performance QR code scanner, streamlining on-site operational workflows.

Lead Developer — JustMe (GDPR Compliance Platform) 01/2019 – 10/2024

Technologies: Ruby (Ruby on Rails), PostgreSQL (ActiveRecord), Redis, OAuth 2.0, E2EE

Led the end-to-end development of a GDPR compliance platform from concept to a functional product, architecting the entire technology stack from the ground up.

The platform's security architecture and feature set were instrumental in the startup successfully securing a €100,000 seed investment from the Data Pitch accelerator.

ROLES AND RESPONSIBILITIES

• Architected and built the entire web application using Ruby on Rails, PostgreSQL, and ActiveRecord, serving as the sole developer in the initial phase.

• Developed a suite of integration plugins for major e-commerce platforms (WordPress, PrestaShop, Magento) to ensure seamless client onboarding.

• Engineered a secure OAuth 2.0 flow to allow users to safely grant the application access to manage their personal data on third-party sites.

• Designed and implemented a custom caching solution featuring end-to-end encryption (E2EE), where data was encrypted client-side, making it unreadable to the server and guaranteeing the highest level of user privacy.

Scale System USA LLC Parallel engagement 06/2025 – Present · Remote

Project Manager and Lead Software Engineer

Independent contract carried out in parallel with my role at PixelStudio, in my own time.

Full-Stack Platform Development (Mobile & AI)

Technologies: Python (FastAPI), Swift (iOS), Java/Kotlin (Android), MongoDB (Beanie), Auth0, LangChain, Sketch, OpenAPI, ClickUp

Spearheaded the creation of a greenfield, AI-powered mobile platform, leading the project from initial concept and strategic planning with executive leadership through to successful application launch.

Architected and delivered the complete, end-to-end technology stack, encompassing a scalable Python backend, a native iOS application, a native Android application, and the integration of AI features.

ROLES AND RESPONSIBILITIES

• Collaborated directly with the CEO and CTO to define the product vision, technical scope, and development roadmap.

• Owned the entire product design phase, driving the vision from concept to high-fidelity UX/UI mockups and prototypes in Sketch.

• Championed an API-first design approach, architecting and documenting the REST API specification using OpenAPI (via ApiDog) to ensure clear contracts between the frontend and backend.

• Architected the foundational backend using FastAPI and Beanie ODM, setting the technical standards and ensuring code quality by conducting 100% of backend code reviews.

- Led all mobile development efforts, personally building the native iOS application from scratch in Swift while providing architectural guidance and technical leadership for the Android (Java/Kotlin) team.
- Engineered a secure and scalable authentication system for both mobile platforms by designing and implementing the Auth0 identity integration.
- Managed a cross-functional team of 3 developers, coordinating the entire development lifecycle and sprint planning using Agile methodologies in ClickUp.

Appmixer, client.io s.r.o.

11/2024 – 01/2026 · Remote

Senior Full-Stack Engineer

My only engagement outside PixelStudio, after which I returned to the company.

Enterprise Security & Compliance Overhaul

Technologies: Node.js, Hapi, Vue.js, MongoDB, Redis, RabbitMQ, RedHat OpenShift, OAuth 2.0, OpenID Connect, SAML

Spearheaded a strategic initiative to deliver enterprise-grade security features, enabling the platform to achieve SOC 2/GDPR compliance and successfully expand into larger enterprise markets.

Architected and delivered two foundational pillars for a platform handling 5+ billion data transactions monthly: a comprehensive Single Sign-On (SSO) system and a full-stack audit logging platform.

ROLES AND RESPONSIBILITIES

- Collaborated directly with the CEO and CTO to define and spearhead the company's enterprise authentication and compliance roadmap.
- Architected and delivered the platform's full-stack audit log system from concept to deployment, fulfilling critical SOC 2 and GDPR requirements for enterprise clients.
- Engineered the complete Single Sign-On (SSO) functionality, implementing both OIDC and SAML 2.0 protocols to support the full spectrum of modern and legacy enterprise identity providers.
- Designed a critical bridge to translate SAML assertions into the platform's internal JWT-based authentication system, ensuring seamless integration for major clients without requiring internal refactoring.
- Strengthened the core authentication mechanism by improving JWT security, implementing audience-based token validation, and introducing a non-disruptive refresh token system.
- Engineered a highly efficient, decorator-based API for the audit logging framework, dramatically simplifying its implementation and ensuring consistent adoption by the development team.
- Designed the complete UI/UX for the audit log back-office portal, creating a highly intuitive interface for client administrators that was praised by company leadership.
- Authored comprehensive, user-facing documentation for the SSO setup process, simplifying customer onboarding and measurably reducing support overhead.

Aegual

Merged into PixelStudio in 2019

01/2013 – 12/2018 · Genova, Italy

Co-Founder & Lead Developer

Technologies: Ruby on Rails, PHP, PostgreSQL, MySQL, AWS (S3, SQS, SES), Stripe API, PayPal API, OAuth 2.0

Co-founded and scaled a software development consultancy from a 2-person team to a successful merger, resulting in a combined company of 4 partners and 7 employees.

Led the design and development of numerous custom web applications and websites, securing and delivering projects for major clients including VarGroup s.p.a. and Alfatech s.p.a.

Specialized in building robust backend systems and complex third-party integrations, including payment gateways and scalable cloud infrastructure on AWS.

ROLES AND RESPONSIBILITIES

- Managed the entire project lifecycle, from initial client consultation and requirements gathering to final deployment and long-term maintenance.
- Architected a wide range of custom web solutions, initially with vanilla PHP to build foundational knowledge, before transitioning the company's stack to Ruby on Rails for enhanced productivity and scalability.
- Engineered secure and reliable payment gateway integrations with Stripe, PayPal, and Sella, processing transactions for various e-commerce and service-based clients.
- Leveraged AWS services to build cost-effective solutions, using S3 for distributed file storage, SQS for asynchronous job processing, and SES for automated email handling and parsing.
- Played a key role in business development, client acquisition, and strategic planning, culminating in the successful merger with PixelStudio to expand service offerings and market reach.