

# FAYCAL GHOZZI

## Fullstack Software Engineer

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Backend-focused engineer with 3+ years building financial integrations, payment middleware, and scalable APIs. Proven experience connecting payment gateways via REST and SOAP, processing high-volume data pipelines, and shipping production systems in Python and PHP.

Author of LazyKitty, an open-source Python web framework.



## PROFESSIONAL EXPERIENCE

### R&D Software Engineer · CESI Strasbourg | Mon Trajet Vert · July 2025 - Present · Strasbourg, France

- Lead engineer on Mon Trajet Vert, a French multi-modal mobility platform aggregating GTFS/GTFS-RT feeds from 7 cities (Strasbourg, Paris, Nantes, Lyon, Toulouse, Bordeaux, La Rochelle).
- Designed and implemented a FastAPI backend on Google Cloud Run with a RAPTOR algorithm for multi-modal journey planning (tram, metro, bus, train), integrating an OSM pedestrian graph for walking transfer generation.
- Built a memory-efficient GTFS ingestion pipeline processing over 20 million rows of schedule data across simultaneous providers, with fault tolerance and daily automated sync.
- Integrated Firestore via a third-party GraphQL API, handled GTFS edge cases: overnight trips, public holiday calendars, route colour normalisation.
- Coordinated architecture decisions with external partner Emage-Me; mentored interns and PhD students.

**Stack: Python, FastAPI, Docker, GCP Cloud Run, Firestore, GTFS/GTFS-RT.**

### Software Engineer · Banque Tuniso-Libyenne (BTL) · Oct 2024 - June 2025 · Tunis, Tunisia

- Architected and delivered the BTL payment middleware connecting TuniCheque to Temenos T24 R11 core banking via SOAP (OFS messages for cheque reservations), with a REST API layer for internal consumers; the system handles over 1,000 daily cheque reservation transactions.
- Built a real-time monitoring dashboard with full transaction audit logging and traceability for banking staff.
- Led the BTL M Banking mobile app end-to-end; improved banking workflows by 20%; optimised SWIFT messages handling and digital storage.
- Delivered BTL-Synthese, a modular application to digitise and validate client balance sheets and income statements, accelerating credit risk assessment with configurable financial row logic.

**Stack: Laravel 9, PHP 8.3, MySQL, Temenos T24, TailwindCSS, JBase, MySQL, REST API, SOAP, JSON, XML.**

### Software Engineer · Hortensia Agency · May 2024 - Oct 2024 · Remote

- Optimised existing backend code and contributed to feature stability on Project Curve, a predictive analytics platform using sigmoid-based financial modelling.
- Integrated Stripe payment gateway, introducing free and paid subscription tiers with webhook-based billing lifecycle management.

**Stack: React.js, Stripe, MongoDB, Flask.**

### Software Engineer · 7Systems GmbH · Feb 2023 - Apr 2024 · Germany (Remote)

- Expanded and stabilised the bmacloud.de SaaS platform; migrated legacy frontend to React.js; improved team productivity by 30% through test automation and CI/CD improvements.

**Stack: React.js, PHP 7.4.**

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## OPEN SOURCE

### LazyKitty | Python · Starlette · WebSockets · uvicorn · morphtom

- Built an open-source Python reactive web framework that renders full-stack UIs over persistent WebSockets with no JavaScript or HTML templates required.
- Implemented a file-based routing system inspired by Next.js (pages/profile/page.py maps to /profile), a declarative component API (Column, Row, Card, Table, Form, Navbar...) mirroring React/SwiftUI layout patterns, and server-side session state management per WebSocket connection.
- Client-side table engine with live search, multi-column sort, and windowed pagination with zero backend calls. Built-in SQLite migration engine and project scaffolding CLI (lazykitty create / run).



## SELECTED PROJECTS

**Real-Time AI Drone Perception System** | Python · ROS2 · YOLOv11 · TensorRT · GStreamer · Flask · React · TypeScript · NVIDIA Jetson Orin

- End-to-end autonomous drone perception platform: embedded AI inference on NVIDIA Jetson Orin streamed live to a React/TypeScript operator dashboard.
- Modular ROS2 pipeline with dedicated nodes for video acquisition, object detection, tracking, telemetry decoding, and video overlay, communicating asynchronously via ROS2 topics.
- Custom-trained YOLOv11 model with TensorRT FP16 acceleration for real-time embedded inference; centroid-based multi-object tracking with persistent IDs, configurable distance thresholds, and track aging.
- Flask server exposing MJPEG video stream and REST API for detection metadata, telemetry, FPS, and latency. Dashboard visualises GPS/IMU telemetry (lat/lon/alt, yaw/pitch/roll) with live detection overlays.

**Real-Time GPS Tracking System** | React Native · TypeScript · Node.js · Express · Socket.IO · SQLite · Leaflet · JWT · Docker

- Full-stack GPS tracking platform: Android app (React Native/TypeScript) streaming positions over WebSocket with local offline buffering and automatic sync on reconnection.
- Web dashboard rendering live trajectories on an interactive map (Leaflet) with session management, tag-based filtering, and multi-device tracking.
- Full security layer: JWT authentication for admins, API key enforcement for mobile devices, dedicated admin panel. Deployed on Linux via Docker.

**Tic-Tac-Two | Real-Time Multiplayer Game** | Next.js · TypeScript · Node.js · WebSockets

- Full-stack multiplayer game with WebSocket communication, deployed on Vercel and Render.



## SKILLS

<b>Backend</b>	Python, FastAPI, Flask, Node.js, PHP, Laravel, Java, Spring Boot, REST, SOAP/WSDL, GraphQL
<b>Frontend</b>	React.js, Next.js, React Native, Vue.js, TypeScript, JavaScript
<b>Data &amp; DBs</b>	PostgreSQL, MySQL, MongoDB, SQLite, Firestore, GTFS/GTFS-RT, pandas, SIRI Lite
<b>Fintech</b>	Stripe, REST/SOAP gateway integration, Swift messages, Temenos T24
<b>Infra &amp; Cloud</b>	Docker, GCP (Cloud Run, Cloud Build), Git, WebSockets, Socket.IO, Apache, Render, Railway
<b>Embedded / AI</b>	ROS2, TensorRT, YOLOv11, GStreamer, NVIDIA Jetson Orin, MJPEG streaming, MQTT
<b>Languages</b>	English (fluent), French (fluent), German (elementary)

## EDUCATION

**National Engineering Degree in Computer Science** · ESPRIT · 2017 - 2023 · Tunis, Tunisia

## CERTIFICATIONS

- Artificial Intelligence | Samsung Innovation Campus (Feb 2025)
- Fundamentals of Deep Learning | NVIDIA (Oct 2021)
- Intermediate Python | DataCamp (Jan 2022)

## PORTFOLIO

