

ZAKARIA SHAHRURI

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SUMMARY

Final-year Applied Computer Science student at UCLL, graduating June 2027. Builds backend and distributed systems, from cloud architecture and API design down to the firmware underneath. Two first-place finishes at international student engineering competitions. Seeking a software engineering internship.

EDUCATION

UC Leuven-Limburg (UCLL)

Bachelor of Applied Computer Science

Exchange semester — Shanghai Polytechnic University, China

Leuven, Belgium

Sep 2024 – Jun 2027 (expected)

Sep 2026 – Jan 2027

EXPERIENCE

BuildBase (Strouwi BV)

Junior Full-Stack Developer

Leuven, Belgium

Sep 2025 – Jan 2026

- Built a workflow automation platform for employee onboarding and absence approvals — Vue.js frontend, Spring Boot REST API, MongoDB — adopted internally to replace email-based sign-off chains.
- Pushed approval state changes over WebSockets instead of client polling, so reviewers saw updates without refreshing.
- Deployed to an OKD (OpenShift) cluster across two-week Scrum sprints, reviewing teammates' pull requests.

Freelance Web Developer

Self-employed

Leuven, Belgium (Remote)

Feb 2026 – Present

- Designed and shipped 3 client sites end to end on Next.js and TypeScript — UI, Sanity/Supabase integration, Vercel deployment, and Core Web Vitals tuning — as sole developer on each build.

PROJECTS

FinFlow — self-hosted, privacy-first finance tracker on near-zero-cost Azure

github.com/ZakariaShahruri/finflow

Java 21 · Spring Boot · Azure Functions · Cosmos DB · Redis · Service Bus · Key Vault · Bicep

- Built on serverless Azure Functions, partitioning Cosmos DB by user so every dashboard query resolves in a single logical partition — costed at ~€0.01/user/month at 100K users.
- Fanned transaction events to independent audit and budget-alert subscribers over a Service Bus topic, cached aggregations in Redis with per-user eviction, and provisioned all seven services as Bicep IaC behind Key Vault.

Sentinel — encrypted wireless sensor platform and tilt-controlled game

github.com/ZakariaShahruri/Sentinel

C++ firmware · Python · FastAPI · Socket.IO · PostgreSQL · Next.js · Docker

- An Arduino Nano samples an MPU-6050 at ~90 Hz, delta-compresses and AES-128-CTR encrypts each packet, and transmits over a custom 433 MHz RF protocol to an ESP32 base station.
- Base station derives per-window features (peak, RMS, zero-crossing) and streams them over Socket.IO to a FastAPI service persisting to PostgreSQL, driving both clients off one pipeline.

Leuven Go — 1st place, HackTheWaste: citizen reports into city work orders

github.com/ZakariaShahruri/HackTheWaste

Java 17 · Spring Boot 3.3 · React 18 · TypeScript · Leaflet

- Built in 24 hours against teams from seven countries, with dashboards for municipal crews and gamified student reporting.
- Collapsed reports into hotspots within a 40 m radius by weighted-mean centroid, auto-escalating to a Planon work order after three merges via an idempotent state machine; hashed photos client-side so no PII is stored.

Smart Car Race — 1st place, BusITWeek: RC car driven from a browser

github.com/ZakariaShahruri/Smart-Car-Race

Python · Raspberry Pi 4 · gpiozero · Apache CGI · Unix sockets · systemd

- Diagnosed why the process-per-request prototype died an hour before the race: GPIO pin state resets on process exit, so motors fired for microseconds.
- Rebuilt control as a persistent daemon owning the GPIO pins behind a Unix domain socket, decoupling motor state from the HTTP request lifecycle; took the fastest lap of the event.

TECHNICAL SKILLS

Languages: Java, Python, TypeScript, JavaScript, C++, SQL, Bash, HTML5, CSS3

Backend: Spring Boot, FastAPI, Node.js, REST APIs, Socket.IO, JWT auth

Frontend: React, Next.js, Vue.js, Vite, Tailwind CSS

Data & AI: PostgreSQL, MongoDB, Cosmos DB, Redis · Pandas, NumPy, scikit-learn, Matplotlib

Cloud & DevOps: Azure (Functions, Service Bus, Key Vault), Docker, GitHub Actions, Bicep IaC, Vercel, Linux, OpenShift

Embedded: Arduino, ESP32, Raspberry Pi, GPIO/gpiozero, MPU-6050, 433 MHz RF

Testing & Tools: JUnit 5, Mockito, Testcontainers, pytest, Vitest, Git, GitHub, Postman, Agile/Scrum

AWARDS & CERTIFICATIONS

1st Place — HackTheWaste International Hackathon, teams from seven countries (Apr 2026)

1st Place — BusITWeek Smart Car Race, Howest Bruges; fastest lap of the event (Apr 2026)

Hurricane Electric IPv6 Sage Certification (Jul 2026)

LANGUAGES

Dutch (Fluent) | English (Fluent — C1, IELTS Academic) | Spanish (Fluent)