Selyan Mouhali

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RESEARCH INTERESTS

Privacy-preserving natural language processing and multi-agent LLM systems studied under real deployment constraints rather than in demonstration settings: detecting and pseudonymising personal data before it reaches a model, running agentic pipelines fully offline on local weights, and the evaluation methodology needed to say whether such a system actually holds up. The constraint I keep returning to is the same one in both lines of work: the system has to behave correctly when the data cannot leave the machine. Currently seeking a six-month on-site research internship abroad, starting September 2027.

EDUCATION

University of Technology of Troyes (UTT) Troyes, France
Master of Engineering (Diplôme d'Ingénieur), Computer Science & Information Systems *2024 – 2029*

- Specialisation in Informatics and Systems (ISI), oriented toward the AI & Smart Tech track; integrated preparatory cycle 2024–2026.
- Relevant coursework: object-oriented programming and software design, computer and network security, databases, mathematics and statistics, numerical methods, physics.

Marie Pila Carpentras, France
Baccalauréat, European section, highest honours *2024*

- Mathematics, Advanced Mathematics, Physics & Chemistry, Economics.

Reynolds High School Victoria BC, Canada
Academic exchange, Canadian curriculum, taught in English *2023*

RESEARCH & ENGINEERING EXPERIENCE

Privasee *privasee.fr* Troyes, France
Founder, sole engineer *2025 – Present*

- Build a data-loss-prevention layer for LLM usage: personal data is detected and pseudonymised in the browser, before the prompt is sent to ChatGPT, Claude or Gemini, and re-identified locally in the answer.
- Designed the detection stack as a two-tier pipeline (fast local pattern and rule matching first, then a Presidio/spaCy NER pass) and wrote a French-specific recogniser package, since off-the-shelf models generalise poorly to French identifiers, name morphology and address formats.
- Audited my own privacy claims and rewrote the public wording to match what the architecture actually guarantees: prompts are not stored, but they do transit through the service. Operate the full system on European infrastructure.

Aksel AI *akselai.fr* Aubignan, France
Founder, registered micro-enterprise *Jul 2026 – Present*

- Web and automation studio: around ten client sites delivered, plus an in-house generator, SEO/GEO work and LLM-backed content and review automations. Funds the research and product work above.

Néréides *nereides.utt.fr* Troyes, France
Partnership Manager *Oct 2025 – Present*

- Manage and grow the partner network; set up monitoring tools and internal communication processes for the partnerships team.

SELECTED PROJECTS

BLAZE *blaze-live.aminssutt.fr* 2026
Fully offline multi-agent decision support for wildfire response

- **Problem.** Fireground radio is dense, unstructured and real time; commanders lose critical minutes structuring it by hand, and a cloud dependency is not acceptable on a crisis site.
- **Method.** A five-agent pipeline (radio intelligence, situation context, tactical fusion and planning, safety critic, dispatch) running local Gemma weights through vLLM on a single machine, with local speech-to-text on the way in and Piper TTS on the way out. No cloud LLM call anywhere in the loop, and no plan reaches a unit without explicit commander approval.

- **Result.** A complete voice-to-voice loop running live as BLAZE Live, a virtual radio: transmission, analysis, proposal, commander validation, synthesised voice order back to the unit. Built at the Gemma 4 Hackathon Paris (42 Paris, Google, NVIDIA) on the Autonomous Agents track and the NVIDIA GPU challenge; reviewed with the president of BK Fire, who pushed the team past the prototype. Now being extended to industrial voice reporting, where operators dictate shift reports the system structures automatically.

jev-seo-geo 2026

Measuring whether web pages are ready to be cited by AI answer engines

- **Problem.** Generative search engines cite some pages and ignore others, and the signals behind that choice are opaque.
- **Method.** A crawl → extract → score pipeline (Python/FastAPI, async workers) producing an explainable Citation Readiness Score: seven components, each returning its score, method, confidence and evidence. I then tested whether a small local LLM could replace the rules on four semantic page decisions.
- **Result.** On a 45-page hand-labelled set, the local model beat a constant-answer baseline on only one decision out of four. I fixed acceptance thresholds before re-testing and kept those decisions deterministic until a model passes them.

SimuPont 2026

Training simulator for nuclear plant crane operators | EDF / Fondation UTT

- **Problem.** Operators of the heavy-lift crane that handles fuel assemblies and control rods train on the real installation, where practice time is scarce and mistakes are expensive.
- **Method.** A Unity simulator reproducing the crane's control interface, with physics-based constraints, real-time 3D visualisation and scenario-driven training.
- **Result.** Public's Favourite Award and finalist at the MégaWatt'UTT Challenge 26 (Nogent-sur-Seine plant), pitched to an industry jury; covered in *Le Parisien*.

Natran Challenge 2026

Data-driven optimisation of SRF pyrogasification | finalist

- Innovation challenge with Natran, France's gas transport operator: modelled fuel-quality classification and sorting efficiency for solid recovered fuel, and quantified the resulting reduction in environmental impact.

AWARDS & DISTINCTIONS

- **Public's Favourite Award & Finalist**, MégaWatt'UTT Challenge 26 (EDF / Fondation UTT), 2026, for SimuPont; covered in *Le Parisien*.
- **Finalist**, Natran Innovation Challenge, 2026.
- **Student-entrepreneur status (SNEE)**, PEPITE Champagne-Ardenne, the national French scheme recognising and supporting student-founded ventures; competed for the Prix Pépite.
- **Baccalauréat with highest honours**, European section, 2024.

SKILLS, LANGUAGES & SERVICE

Languages	French (native), English (fluent, Linguaskill Cambridge C1+), Spanish (intermediate, SIELE B1).
Programming	Python, TypeScript / JavaScript, Java, SQL.
AI & ML	LLM agents and multi-agent orchestration (LangGraph, MCP); retrieval-augmented generation; local inference on open weights (Gemma served through vLLM); NER and PII detection (Presidio, spaCy, custom French recognisers); speech-to-text and TTS pipelines (Piper); classical ML (scikit-learn).
Systems	Docker, Linux, FastAPI, Celery, Next.js, React, Node.js, PostgreSQL, MySQL, Supabase, Unity, Git, Vercel, Hetzner.
Service	Ambassador, Hackathon Hub (2026 to present), a European hackathon network connecting builder communities across the continent.
Other	Karate black belt, departmental and regional champion, French national championships.