

# Zaccarie Kanit

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n2oblife

## Languages

French - Native speaker  
English - Fluent - C1  
German - Professional - B2  
Arabic - Professional - B1

## Skills

### Technical Skills

- Python, C/C++, SQL, R, Matlab, Bash, PowerShell
- VHDL, SystemC, RISC-V, FPGA (Xilinx, Microsemi), Raspberry Pi
- Threat modeling (TAL, Octave, TARA ISO21434), Cryptology, Secure Communications
- PyTorch, TensorFlow, LibTorch, Scikit-learn, Convex Optimization, Bayesian Inference
- Trankit, OpenNMT, SpaCy, Stanza, CTranslate2
- OpenMP, CUDA, SIMD, Multicore Profiling
- CI/CD, Git, Docker, Static Code Analysis
- Linux, Kali, Sysadmin, SNMP
- Graphic/CLI Debugging, GoogleTest, Icov, Makefile, Performance Benchmarking, Embedded Trace Analysis
- Doxygen, YAML

### Office skills

- Office Pack, Google Tools and AppScript
- L<sup>A</sup>T<sub>E</sub>X, Markdown
- Zapier, AirTable

### Audiovisual editing

- Adobe Premier / Photoshop / Audition, Gimp
- OBS / FLStudio

## Interests

### Sports

- karate - black belt (8y), basket-ball in club (8y), biking (8y), kickboxing (3y)

### Leisures

- videogames' design (13y), bassist in a band (7y), theater at the Paris' Conservatory (4y), cinema talkshows (8y)

# Complete curriculum vitae

## Experience

**Embedded Software Working Student**      **Siemens AG**      **March 2025 – August 2025**

- Developed a **GitLab CI/CD testing pipeline** for validating embedded firmware.
- **CAN communication monitoring** and integration testing in a Linux-based environment.
- **Preliminary threat model** for the system, identifying potential attack surfaces on firmware and CAN bus communication, and proposed mitigations based on STRIDE methodology.

**Embedded System Engineer**      **Velidar**      **September 2024 - December 2024**

- Startup at STATION F (world's biggest incubator), creating bike radars.
- **Prototyped radar products** from concept to release-ready with high quality.
- **Led a team of 7 students** from IMT Atlantique, fostering collaboration and technical growth.
- Analyzed market trends to align products with demand.

**FPGA Engineer Intern**      **Bertin Technologies**      **March 2024 - August 2024**

- French company specializing in Nuclear, Defence, Space, Big Science, and Health.
- **R&D in video enhancement algorithms**: Tested (MATLAB/Python) and **implemented in VHDL non-uniformity correction** for next-gen IR cameras, developed a **defective pixel detection algorithm (low-resource)**, and wrote a **C driver for RISC-V communication** for this very HW.
- Shadowed product owner in meetings and project planning.

**Software Engineer Intern**      **SIMULANDS**      **October 2023 - December 2023**

- Swiss medtech startup developing Human Grade simulators with realistic procedural experiences and device performance insights.
- **Mixed Reality R&D**: Implemented **C++ computer vision algorithms** for surgical tool tracking and denoising, optimized for **real-time computation**, designed **hardware-optimized software architecture**, integrated into Unity pipelines, built AR scenes, gamified procedures.
- **Database administration**: Migrated subcontractor database to Azure, created a **pipeline for redundant statistical analysis**, and conducted **training data analysis for insights**.

**Research Assistant Intern**      **CEA List**      **April 2023 - August 2023**

- Europe's leading patent-filing research lab, specializes in **digital systems and Deep Learning**.
- Project: Researched a **state-of-the-art Transformer NLP model** / developed a Python **training pipeline with Adapter technology and C++ conversion** / trained using CEA's cluster / **optimized C++ inference engine for high token computation frequency** / integrated with a multilingual NLP model / ensured **documentation and sustainability**.

**Network Administrator, Secretary, Training Manager**      **ResEI**      **2021 - 2023**

- Technical association managing a network of **3K+ machines across campuses** and offering members essential tech skills.
- **Managed a team of student administrators**, ensuring the **association's legal framework** and professional event compliance as a board member.
- Organized events like **Google Hash Code** and **FedeRez Days**, and led IT training programs from basics to advanced networking.
- **Developed an inverter monitoring tool** as part of a key project.

**Right Hand of the CEO Intern**      **PostExo**      **February 2022**

- **Automated the registration process** using the website and Zapier for scheduling.
- **Redesigned the website** with a flexible, adaptable architecture.
- Developed **communication strategies** leveraging social media.

**Biology Research Assistant Intern**      **Institut Curie**      **January 2015 - June 2015**

- **Assisted biology researchers**, maintaining cultures, performing electrophoresis to analyze genes, and **delivered presentations** on findings.

## Education

**MSc. - Electrical Engineering and IT**      **Technical University of Munich**      **2024-2026**

- 1st-ranked university in Germany
- Courses : embedded systems and security, **HW/SW codesign**, ML and optimization.
- Elective modules : convex optimization, embedded system design for ML, SW architecture for distributed systems, **advanced crypto implementation**, multicore processors, peer to peer security, security engineering, **circuit design for security**, **IoT security**, ML and IT security, seminar on processor design for AI.
- Labs : image/video compression and security dedicated ASIC design for RISC-V.
- Interdisciplinary : **intro to patent, trademark and law**.

MicroMaster - Statistics and Data Science MITx February 2023 - May 2023

- **Machine Learning in Python: From Linear Models to Deep Learning** (230h).
- Comprehensive training from **Linear Classifiers and Recommender Systems** to **Unsupervised and Reinforcement Learning**, with weekly projects to apply concepts.

MEng. - Embedded Systems, Excellence Program for Research IMT Atlantique 2021 - 2023

- 3rd-ranked engineering school in France.
- Key coursework: Mathematics (**analysis and algebra**), **graph theory**, logistic optimization), Physics (RF, thermodynamics) **Computer Vision**, **Data**, Sc Computing.
- **Embedded Systems: Algorithm-to-Chip Design**, Low-Level Software-Hardware Interactions (driver development, prototyping), **Parallel Computing (bottlenecks studies)**, and **Deep Learning Optimization**, Stochastic Dynamic Modeling and Bayesian inference.
- School Projects: **Deep Learning service DevOps** with Orange / electronic waste recycling feasibility study.
- Research: **Fast EEG computation algorithm in C++**, **ML comparison of CNN vs. Vision Transformers** (time/power efficiency), and a course on Inversible CMOS Logic.

BSc. - Mathematics and Physics, Preparatory Classes Lycée Fénélon 2018 - 2021

- Intensive prep for national competitive exams to enter the top French engineering schools.
- Advanced theoretical coursework in **Mathematics** (algebra, analysis, geometry, calculus), **Physics**, Chemistry, IT (**algorithmy**) and humanities.
- Hands-on lab sessions in physics and chemistry to apply theoretical concepts.

High School Diploma, Baccalaureat of Science Lycée Henri IV 2015 - 2018

- A beacon of academic excellence in France, 2nd best French high school
- With Honors, studying Sciences and specializing in **Mathematics and Computer Science**

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## Volunteering

President Kebab Club 2021 - 2022

- Led a team of 8 students to sell **200+ homemade kebabs weekly** on campus.
- **Managed logistics and communication** for events, ensuring hygiene and safety standards.
- Established partnerships with local suppliers for fresh ingredients.

Vice-President Arts Committee 2021 - 2022

- **Led a team of 18 students** to organize and manage art-oriented events and clubs on campus, elected by students based on leadership and vision.
- Ensured the **legal framework, smooth coordination and event security** throughout the term.
- Coordinated events including student and local musician concerts, Western France cultural festivals, a week-long artistic event, and a **cultural trip to Amsterdam for 90 students**.

Sound & Light Manager S&L Club 2021 - 2022

- **Set up and configured sound and lighting systems** for events, including acoustic tuning of amplifiers and ambient lighting design and control.
- Prepared **security plans** to ensure safety for large crowds at events.

Project Manager Sustainable Development Bureau 2021 - 2022

- Bike-sharing projet : managing the renting system, maintaining the parc et do paperwork
- Orchard Project: Maintenance and planting of apple tree samplings on campus / teaching to students how to take care of an orchard

Mathematics and Physics Teacher Renovo 2016 - 2022

- **Taught Mathematics and Physics** to students from disadvantaged neighborhoods during holiday sessions.
- Organized **cultural and educational outings** to museums, local startups, and companies to inspire students.

Food Assistance Volunteer Ensemble pour l'Avenir 2012 - 2016

- **Prepared and served 150 meals per evening** to homeless individuals during holiday periods.