

# Bréhan Eraud-Robert

Rouen and Toulouse, France | Category B driving licence, no personal vehicle  
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Visual version of this resume, with project images: [beraud.dev](https://beraud.dev)

## Specialisation internship, 2-3 months – Starting early January 2027

As a computer science engineering student, I am seeking to develop my skills through an internship in image processing, machine learning, embedded systems or cybersecurity.

## Education

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <b>INSA Rouen Normandie</b><br>Engineering program, ISIA department: Computer Science, Systems and AI (4th year)<br>STPI preparatory cycle, 2nd year: pre-specialization in maths and computer science | Rouen, France<br>Since 2025<br>2024 – 2025 |
| <b>Lycée Pierre de Fermat</b><br>CPGE MP2I: mathematics, physics and computer science. TIPE on music recognition                                                                                       | Toulouse, France<br>2023 – 2024            |
| <b>Institut de Genech</b><br>French Baccalauréat with highest honors, majors in mathematics and computer science (NSI)                                                                                 | Genech, France<br>2020 – 2023              |

## Experience

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| <b>Full Stack Developer – Student orientation website</b><br>INSA'Stronaute, INSA Rouen Normandie, team of 3 developers<br><ul style="list-style-type: none"><li>App features: department challenges, events, leaderboards, shop and collectible cards</li><li>Spring Boot API (challenges, moderation, events, leaderboards, cards) and admin panel</li><li>Java, Spring Boot, PostgreSQL, Redis, Keycloak, React, TypeScript, Docker, k6 – 400 users</li></ul> | May – Sep. 2026<br>Rouen, France     |
| <b>Private Tutor</b><br>Self-employed, middle and high school students<br><ul style="list-style-type: none"><li>Science lessons tailored to each student, tracking their progress and independence</li></ul>                                                                                                                                                                                                                                                     | Since 2024<br>Rouen, France          |
| <b>Drive and E-commerce Associate</b><br>Auchan, worker internship<br><ul style="list-style-type: none"><li>Order picking, stock management and customer service, as part of a team</li></ul>                                                                                                                                                                                                                                                                    | Jun. – Jul. 2025<br>Toulouse, France |

## Projects

Screenshots and details at [beraud.dev](https://beraud.dev)

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| <b>Autonomous Robot</b><br>Jetson Orin Nano, ROS, Docker, Python, LiDAR<br><ul style="list-style-type: none"><li>4th-year project in pairs: getting a 1:10-scale autonomous car (MuSHR platform) to drive on its own again</li><li>Motor control development, steering calibration and creation of ROS nodes for vehicle driving.</li></ul>                       | Since Sep. 2026 |
| <b>Itinéraire</b><br>Python, NumPy, SciPy, scikit-learn, OpenCV, Raspberry Pi, LiDAR<br><ul style="list-style-type: none"><li>Team of 4: trajectory estimation by fusing GNSS and IMU data, then mapping a building floor with LiDAR</li><li>Lead contributor: 5-state extended Kalman filter, LiDAR pipeline to an occupancy grid map, IMU calibration</li></ul> | May – Jun. 2026 |
| <b>Mini DBMS in Java</b><br>Java, JavaCC, JUnit, Mockito, GitLab CI<br><ul style="list-style-type: none"><li>Team of 5: in-memory relational database engine with joins, persistence and a psql-inspired terminal</li><li>JavaCC grammar for the query language, query engine refactoring and error handling</li></ul>                                            | May – Jun. 2026 |
| <b>AutoDecomp</b><br>Python, NumPy, SciPy, Jupyter, matplotlib<br><ul style="list-style-type: none"><li>Team of 4: separating the instruments of a mono recording through NMF of its spectrogram</li><li>Hand-coded STFT and inverse transform, additive gradient descent, NMF with three divergences (Euclidean, Kullback-Leibler, Itakura-Saito)</li></ul>      | Dec. 2025       |

## Skills

**Signal and Image:** FFT and STFT, NMF factorization, Kalman filter, OpenCV  
**Systems and Embedded:** C, Linux, Raspberry Pi, Jetson, ROS, Docker  
**Software Engineering:** Java and Spring Boot, JavaCC, JUnit, OCaml, Git, continuous integration  
**Web and Infrastructure:** TypeScript, React, Python and FastAPI, PostgreSQL, Redis, Keycloak, Traefik, CI/CD, k6 load testing, self-hosting  
**Languages:** French (native) | English: B2 | Spanish: B1