

# AOUANOUK Slimane

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Available from June to August 2026

## SUMMARY

Engineering student with a strong foundation in physics-based modeling, numerical simulation, CAD design, and experimental analysis applied to mechanical systems. Experienced in CFD, Python-based data analysis, and system-level engineering projects, seeking a Summer 2026 internship to explore data-driven roles applied to physical systems.

## EDUCATION — Combined GPA : 3.92 / 4.00

**Arts et Métiers Institute of Technology (ENSA) — Paris, France**

**Sept 2024 – Jul 2026**

**Combined BS × MS Engineering Degree** — Arts et Métiers is a member of **ParisTech**, a consortium of prestigious French institutions recognized for academic excellence, outstanding faculty, and world-class research laboratories.

- **Ranked top 13% of cohort (160 / 1203 students)**

- **Relevant Coursework:** Mechanics of Solids, Robotics and Mechatronics, Numerical Optimization (Newton, Gradient-Based Methods), Engineering Mathematics, Computer-Aided Design (CAD), Computational Fluid Dynamics (CFD), Fluid Mechanics, Heat Transfer

## SELECTED PROJECTS

### AI-Driven Smart Workshop Project – Arts et Métiers

**2025**

- Built an end-to-end local data & AI pipeline to query technical workshop data in natural language, Structured heterogeneous CSV data and migrated it to a relational SQLite database, Validated and explored data using Python and pandas, Designed SQL views to simplify complex joins and improve robustness, Implemented a secure Text-to-SQL system powered by a locally deployed LLM (Ollama) with strict query constraints, Developed a Streamlit interface to demonstrate real-time usage and human-readable responses

### Aircraft Brake System Design Project – Arts et Métiers

**2025**

- Designed a complete mechanical braking system for a light aircraft wheel composed of 10+ components using Fusion 360, Built a physics-based functional architecture ensuring torque transmission across 5+ mechanical interfaces, Quantitatively modeled load paths and mechanical constraints, Performed engineering validations including bearing preload analysis, bolt slip criteria, shaft stress verification, and brake disc thermal dissipation, Ensured system consistency through analytical checks and safety margins

### Miniature Formula One Car Design – Arts et Métiers

**2025**

- Designed a miniature F1 car optimized for a 20 m straight-line race, Developed the full CAD model in Fusion 360 with 3–4 data-driven design iterations, Conducted CFD simulations in STAR-CCM+ at 50 m/s to analyze pressure and drag distributions, Used simulation outputs to guide aerodynamic optimization, Produced a full-scale 3D-printed prototype and prepared CNC machining of the final body while ensuring compliance with 10+ technical regulations

### Supervised Personal Research Project: Impact of Hitting Techniques on Ball Speed – Lycée Raspail 2021–2023

- Designed a custom pendulum-based impact test rig with interchangeable impactors to study impact dynamics, Conducted dozens of controlled experiments using video-based motion capture, Extracted velocities and contact times through Python-based data processing, Analyzed experimental data to build a physics-based interpretation of ball–impactor interactions, Demonstrated a velocity amplification ratio of approximately 1.2

## WORK EXPERIENCE

### Construction Site Worker Intern – Société de Rénovation Parisienne (SRP)

**Summer 2025**

- Supported large-scale construction operations on a major renovation project involving **3,000+ tons of excavated soil**, Conducted **on-site measurements, markings, and consistency checks** under real-world tolerances during a **9–10 month underground phase**, Coordinated with subcontractors and adapted plans to field constraints, gaining hands-on exposure to **field data**, safety requirements, and execution-theory gaps

## LEADERSHIP AND VOLUNTEERING

### Volunteer Tutor – Middle and Preparatory School Students

**2022 – Present**

- Provided academic support in mathematics, physics, and engineering sciences, focusing on problem-solving and structured reasoning

## SKILLS AND INTERESTS

**Data & Programming:** Python (data analysis, numerical computation), SQLite, MATLAB, Arduino, LaTeX

**Modeling & Simulation:** Computational Fluid Dynamics (STAR-CCM+), Mechanical CAD (Fusion 360, 3DEXPERIENCE)

**Experimental Tools:** Video-based motion analysis, sensor-based measurements

**Languages:** French (native), English (fluent; TOEFL iBT: 88/120), Italian (basic), Spanish (basic)

**Interests:** Data-driven engineering, applied AI, technology ecosystems (Apple), basketball, soccer, strength training