Rémi Mazhar

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Education

École Polytechnique, Paris – Engineer's degree (equivalent to a Master of Science) Sept 2024 – Aug 2028 (Expected)

- Ranked #1 Engineering School in France
- Third-year specialization: Space Sciences & Challenges ("Sciences et Défis du Spatial")
- **Relevant coursework**: Plasma Physics, Advanced Quantum Physics, Stellar Astrophysics, Compressible Fluid Dynamics

Lycée Blaise Pascal, Orsay (France) – Intensive Post-Secondary Foundation in STEM (CPGE) Sept 2022 – Jul 2024

- Two-year program preparing for national competitive exams in Mathematics and Physics (MP)

Experience

Research Project, Laboratoire de Physique des Plasmas (LPP) - Palaiseau (France) Sept 2026 – Present

- Investigating the stabilization of breathing-mode oscillations in a Hall-effect thruster through magnetic field modulation
- Measured the inductive coupling between the coil current and the discharge current

R&D Intern, Airbus Defence & Space - Munich (Germany) Jun 2026 – Sept 2026

- Characterized measurement artifacts in infrared CMOS sensors for Earth-observation satellites, identifying effects that the usual calibration fails to correct
- Automated a remotely controlled optical test bench (LabVIEW) and analyzed the experimental data (Igor Pro)
- Modeled an integration-time-dependent sensor bias and developed a correction algorithm for it

Physics Oral Examiner, Lycée Blaise Pascal - Orsay (France) Sept 2025 – Jun 2026

- Conducted weekly oral examinations for undergraduate students in STEM preparatory classes (CPGE)

Engineering Intern, CMRRF Kerpape (Rehabilitation Center) - Lorient (France) Sept 2024 – Apr 2025

- Designed and fabricated 50+ custom assistive devices using CAD software, 3D printing and CNC machining to solve complex mobility and accessibility challenges

Private Mathematics Tutor, Freelance Sept 2024 – Jun 2025

Skills

Experimental Physics: Optical Test Benches, Data Acquisition Automation (LabVIEW), Sensors & Signal Processing, Detector Calibration
Scientific Computing: Python (NumPy, SciPy, Pandas), C++, CUDA, Igor Pro, Linux
Prototyping: CAD (Fusion 360), 3D Printing, CNC Machining, PCB Design, Arduino/Raspberry Pi
Languages: French (native), English (C1)

Engineering Projects

Rocket engine development Sept 2025 – Present

- Member of a student team designing and testing a liquid propellant rocket engine for university rocketry competitions

Robotics

- Leading a 15-student team in the 2027 French Robotics Cup (Coupe de France de Robotique) Sept 2026 – Present
- Designed and built an experimental climbing robot relying on polyarticulated tentacles Sept 2025 – Dec 2025

Motorized a Telescope 2024

- Designed a motorized, computer-controlled tracking system converting an antique telescope into precise astrophotography equipment. Using it and upgrading it regularly to take pictures of space

Competitive Programming & Computer Science Projects github.com/RemiMazhar

- Ranked **10th nationwide** in Prologin 2026, a competitive programming contest with thousands of participants